PRELIMINARY ASSESSMENT

FOR

MARLAING ADDITION

WV-494

SAINT ALBANS, WEST VIRGINIA

KANAWHA COUNTY

SEPTEMBER 16, 1992
REVISED NOVEMBER 30, 1992

WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION

SITE INVESTIGATION AND RESPONSE SECTION

OFFICE OF WASTE MANAGEMENT

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Reviewed and approved By:

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EPRM

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I. Introduction

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA); the West Virginia Division of Environmental Protection, through a cooperative agreement (V003613-01) with the USEPA Region III, conducted a Preliminary Assessment (PA) at the Marlaing Addition site (WV-494), Kanawha County, West Virginia. The purpose of this investigation was to collect information concerning conditons at the Marlaing Addition site sufficient enough to assess any threat posed to human health and to the environment. This information will determine the need for additional CERCLA/SARA or other appropriate actions. The scope of this investigation included the review of available file information and a comprehensive target survey.

II. Site Characteristics

A. Site Location

Marlaign Addition is located approximately 1,800 feet east of US Route 35 and 4,300 feet north of the intersection of US Route 60 and US Route 35 in Saint Albans, West Virginia. This site can be found on the Saint Albans, West Virginia, United States Geological Survey (USGS) 7.5 minute quadrangle at the coordinates 81°51'21" West longitude and 38°33'17" North latitude. (1)(See Site Location Map, Figure 1)

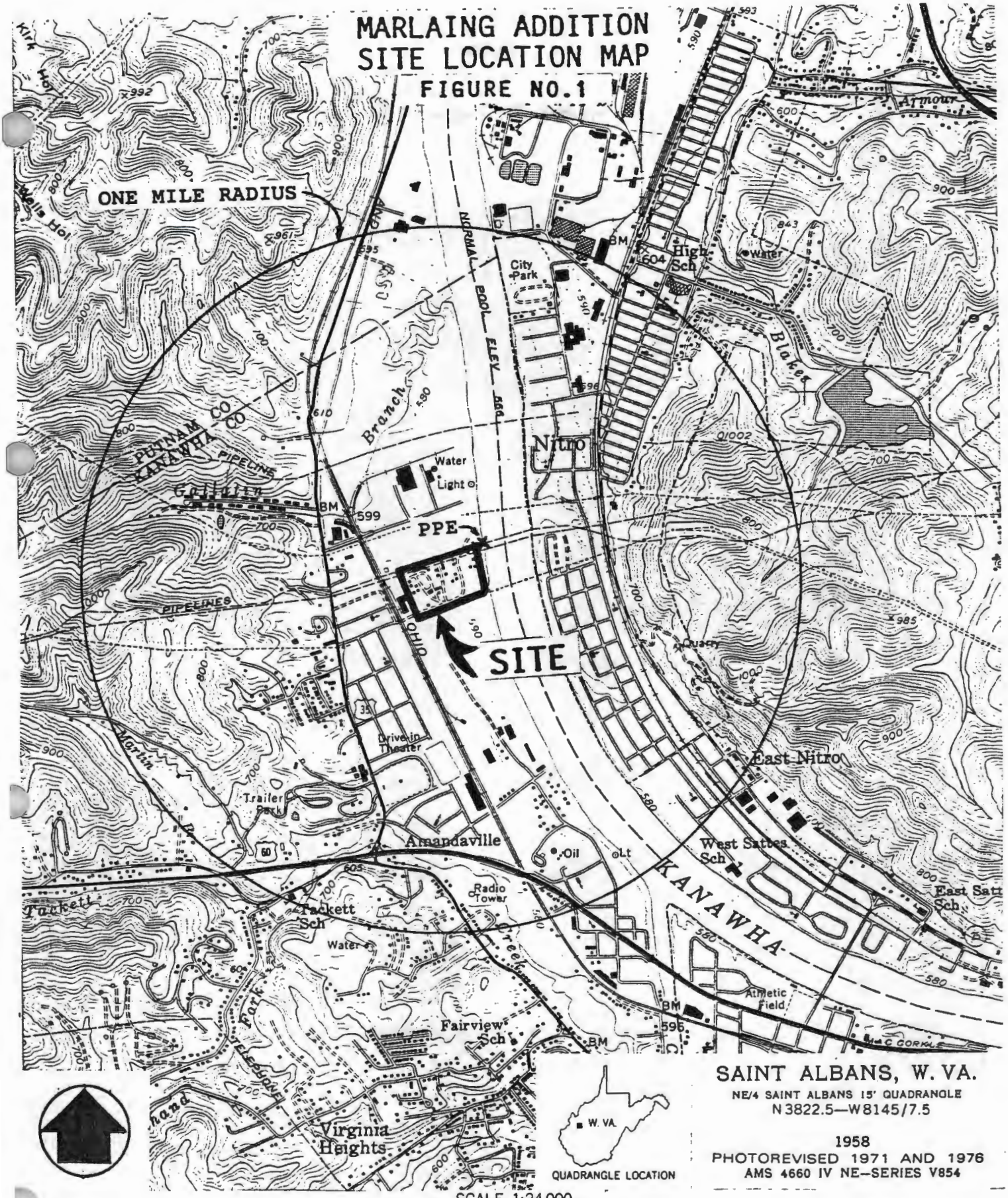
The average winter temperature for the Saint Albans' area is 34°F with an average daily minimum temperature of 27°F. During the summer months, the average temperature is 73°F with an average daily maximum temperature of 84°F. The average relative humidity in the mid-afternoon is 50 percent. Humidity is higher at night and the average at dawn is about 80 percent. The prevailing wind is from the southwest. Average wind speed is the highest, 9 miles per hour, in March. The average annual rainfall is 41.37 inches with a mean annual lake evaporation of 34 inches, thus netting an annual precipitation of 7.37 inches. (2) The 2-year, 24-hour rainfall for this area is 2.66 inches. (3)

B. Site Description

Marlaing Addition, located in Saint Albans, West Virginia, is a residential subdivision encompassing approximately 17 acres. A typical dwelling for this subdivision can be described as being a one-story, single-family detached, framed house. This site, located along the Kanawha River and lying within the 100-year flood plain (5), is relatively flat with an elevation of 590 feet Above Mean Sea Level (AMSL) that gradually slopes towards the East. (1)

The apparent boundaries for this subdivision are as follows: to the north lies the Old Municipal Waste Landfill; to the west is Virginia Street; 1st Street lies to the south while the Kanawha River is located to the east. Since this site is a residential subdivision, no restrictions to access exists. (See Site Map, Figure 2)

4



SAINT ALBANS, W. VA.

NE/4 SAINT ALBANS 15' QUADRANGLE

N3822.5—W8145/7.5

1958

PHOTOREVISED 1971 AND 1976

AMS 4660 IV NE—SERIES V854

SCALE 1:24 000

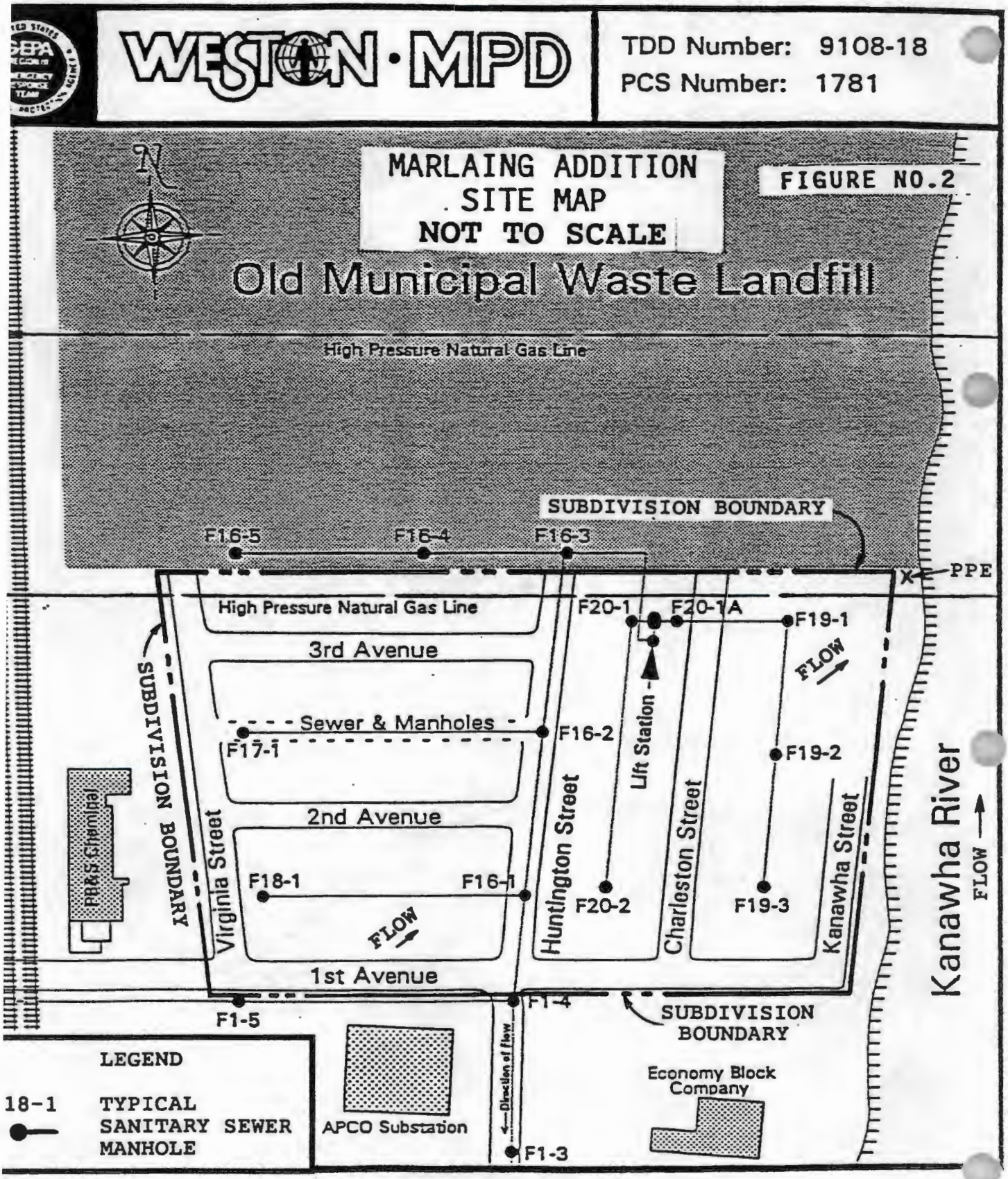
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETER

WESTON·MPD

TDD Number: 9108-18
PCS Number: 1781



SITE SKETCH
Marlaing Addition Gas Release
St. Albans, Kanawha County, West Virginia

C. Surface Water

Surface water at the site travels by overland flow east toward the Kanawha River which, in turn, flows north past the site. The Kanawha River flows generally northeast 44 miles to its confluence with The Ohio River at Point Pleasant, West Virginia. (See Surface Water Migration Map, Figure 3) Stormwater runoff from west of the Chesapeake and Ohio Railroad tracks is transported through this site by a closed conduit system. Together with any runoff generated onsite, the offsite drainage is released into the Kanawha River. (1)

The Kanawha River is utilized for recreational boating, fishing and swimming, for commercial barge traffic and for industrial purposes (cooling water etc.). There are numerous chemical and industrial facilities along the river in the site area, and for approximately 50 miles upstream, which utilize water from the river and discharge waste water to the river.

Gallatin Branch which flows within 1,500 feet of the site's center, enters The Kanawha River approximately 4,400 feet downstream. (1)

There are no known surface water intakes within 15 miles downstream of the site.

D. Site Geology and Soils

The site is located in the Unglaciated Allegheny Plateau Section of the Appalachian Plateaus Province Geomorphic Unit. This section is described as the maturely dissected middle portion of the Appalachian Plateau.(15)

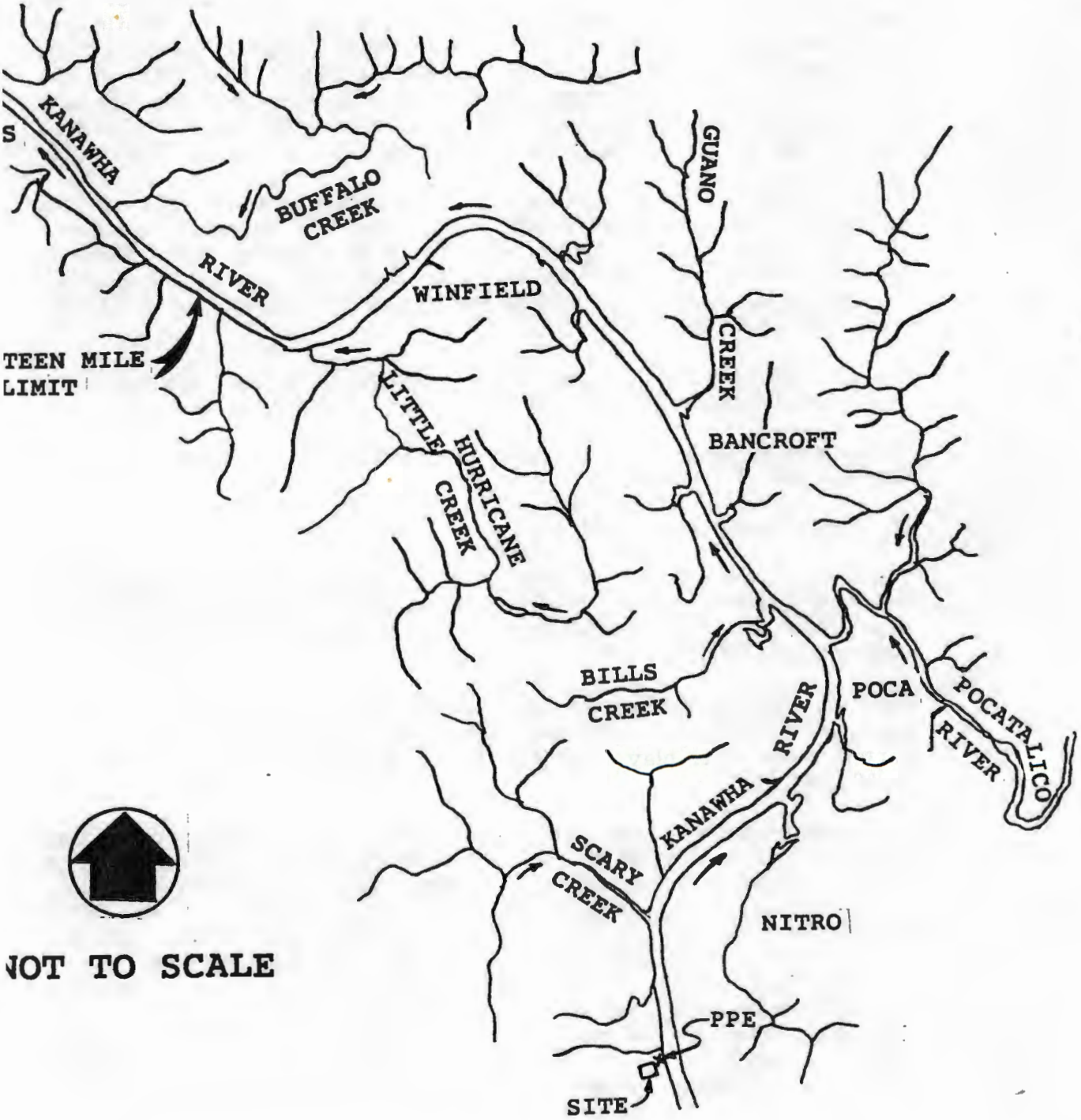
Directly underlying the site are Quaternary alluvial deposits which generally consist of unconsolidated river deposits of poorly to well sorted sand, silt, clay, and gravel.(6) The alluvium ranges from 55 to 60 feet.(14)

Underlying the alluvium and outcropping in low areas surrounding the site area is strata of the Upper Pennsylvania aged Conemaugh Group. This group consists of mostly non-marine cyclic sequences of red and gray shale, siltstone, and sandstone, with thin limestones and coals. The Conemaugh Group is divided into the Casselman and Glenshaw Formations, and extends from the base of the Pittsburgh Coal to the top of the Upper Freeport Coal.(13) Borings made approximately 6,000 feet northeast of the site along the east bank of the river show the surface of the Conemaugh Strata underlying the alluvium is generally flat lying, highly weathered, reddish brown to gray shale and claystone which is fractured to varying degrees.(14)

Outcropping in the higher topographic areas on both sides of the river, and stratigraphically overlying the Conemaugh Group is Strata of the Upper Pennsylvanian Monongahela Group. This group consists of non-marine cyclic sequences of sandstone, siltstone, red

MARLAING ADDITION
SURFACE WATER MIGRATION MAP

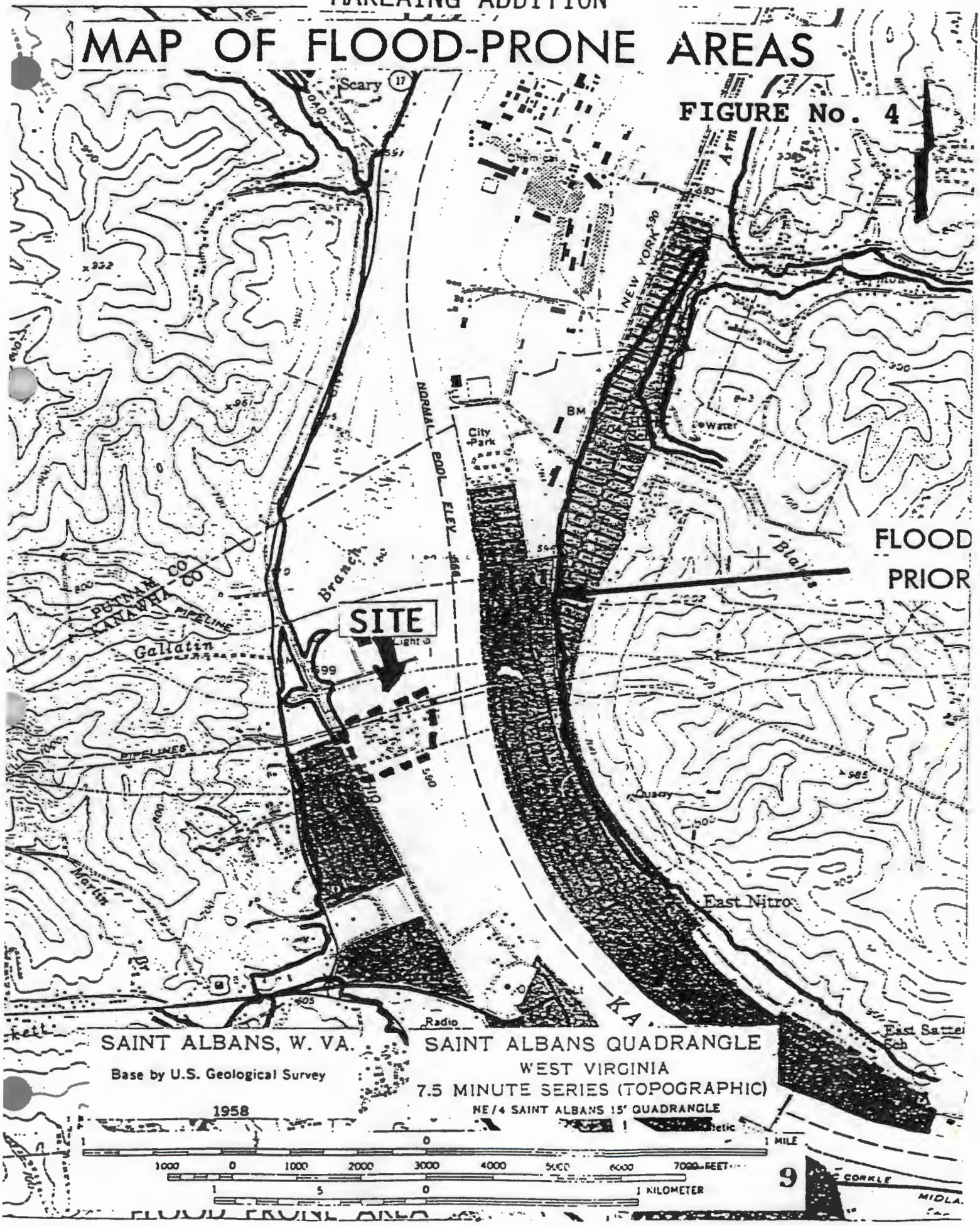
FIGURE No. 3



MARLAING ADDITION

MAP OF FLOOD-PRONE AREAS

FIGURE No. 4



and gray shale, limestone, and coal. It contains the Uniontown and Pittsburgh Formations and extends from the top of the Waynsburg Coal to the base of the Pittsburgh Coal (See Figure 5 for Geologic Map and Legend).(6)

Located approximately one fourth east of the site is the axis of an unnamed, southwest-northeast trending anticline. Located approximately 6.5 miles northwest is the axis of an unnamed south-north trending anticline. Located approximately 9 miles northeast is the axis of an unnamed, south-north trending syncline.(6)

Soils at the site can be generally described as Urban Land which consists of soils on flood plains along the Kanawha and Coal Rivers. Four specific soil units can be identified at the site. Dumps (Dm) consists of industrial, commercial and municipal wastes which may include chemicals, coal dumps, fly ash, solid waste and tailings. These areas may not have soil cover but in some cases have been reclaimed for building sites. Depth to bedrock, pH and permeability of Dumps vary greatly. (2)

Cotaco Loam (Ct) is a well drained soil which is found on river terraces and can be described as nearly level, moderately well drained, smooth and generally concave. The unit consists of several layers of dark brown loam, sandy clay loam, light clay loam and clay loam, yellowish brown to light brownish gray in color. Depth to bedrock is generally greater than five feet. In its natural state this soil ranges from strongly acid to extremely acid (3.6-5.5 pH). Permeability of Cotaco Loam is moderate (0.6-6.0) inches per hour. (2)

Fluvaquents (FL) can be found in areas similar to that of the Cotaco Loam. Gray to pale brown silty loam make up the surface layer while gray silty loam an silty clay are found in the subsoil. Depth to bedrock is most commonly greater than four feet. Permeability and pH of Fluvaquents also vary greatly.(2)

Kanawha Fine Sandy Loam, 0-3 percent slopes (KaA) is the fourth soil possibly found at the site. This soil is found on high flood plains, and is described as well drained, smooth and convex. A dark brown fine sandy loam layer can be found on the surface. The subsoil consists of various yellowish brown to grayish brown friable sandy loam layers. This medium to strongly acid soil (5.6-6.5 pH) is used for home sites, cultivated crops, pasture and is also well suited for trees. Depth to bedrock is generally greater than six feet and permeability is considered moderate (0.6-6.0 inches per hour).(2)

E. Groundwater

It is believed that groundwater in the site area is not used for private, commercial or industrial purposes. The upper most aquifer of concern within the study area is the Quaternary Alluvium. The Quaternary Alluvium is reported to have moderate potential for industrial and municipal water supplies. Sand and gravel lenses are

FIGURE No. 5

MARLAING ADDITION
GEOLOGIC MAP AND LEGEND

CENOZOIC

Qal — Quaternary Alluvium

Unconsolidated alluvial deposits of sand, gravel, silt, and clay.

PALEOZOIC

PERMIAN OR PENNSYLVANIAN SYSTEM

Pd — Dunkard Group

Predominantly clastic sequences of sandstones, siltstones, red and gray shales, limestones, and coals. Contains the Upper Washington Formation. Extends from the base of the Pennsylvanian system to the base of the Pittsburgh coal in the area of the Upper Freeport coal. Sequence also includes the Waynesburg coal, and the Adena and Brush Creek Limestone Members of the Glenshaw Formation.

PENNSYLVANIAN SYSTEM

UPPER PENNSYLVANIAN

Pm — Monongahela Group

Predominantly clastic sequences of sandstones, siltstones, red and gray shales, limestones, and coals. Contains the Uniontown and Pittsburgh Formations. Extends from the base of the Pittsburgh coal in the area of the Upper Freeport coal to the base of the Conemaugh Formation. Includes the Benwood, Limestone, Sewickley, Redstone and Pittsburgh coals.

Pc — Conemaugh Group

Clastic sequences of red and gray shales, siltstones, and sandstones, with thin limestones and coals. Contains the Uniontown, Saltsburg, Vanport, and Brush Creek Limestone Members of the Glenshaw Formation.

GROUND-WATER HYDROLOGY OF THE MINOR TRIBUTARY BASINS OF THE KANAWHA RIVER, WEST VIRGINIA

by

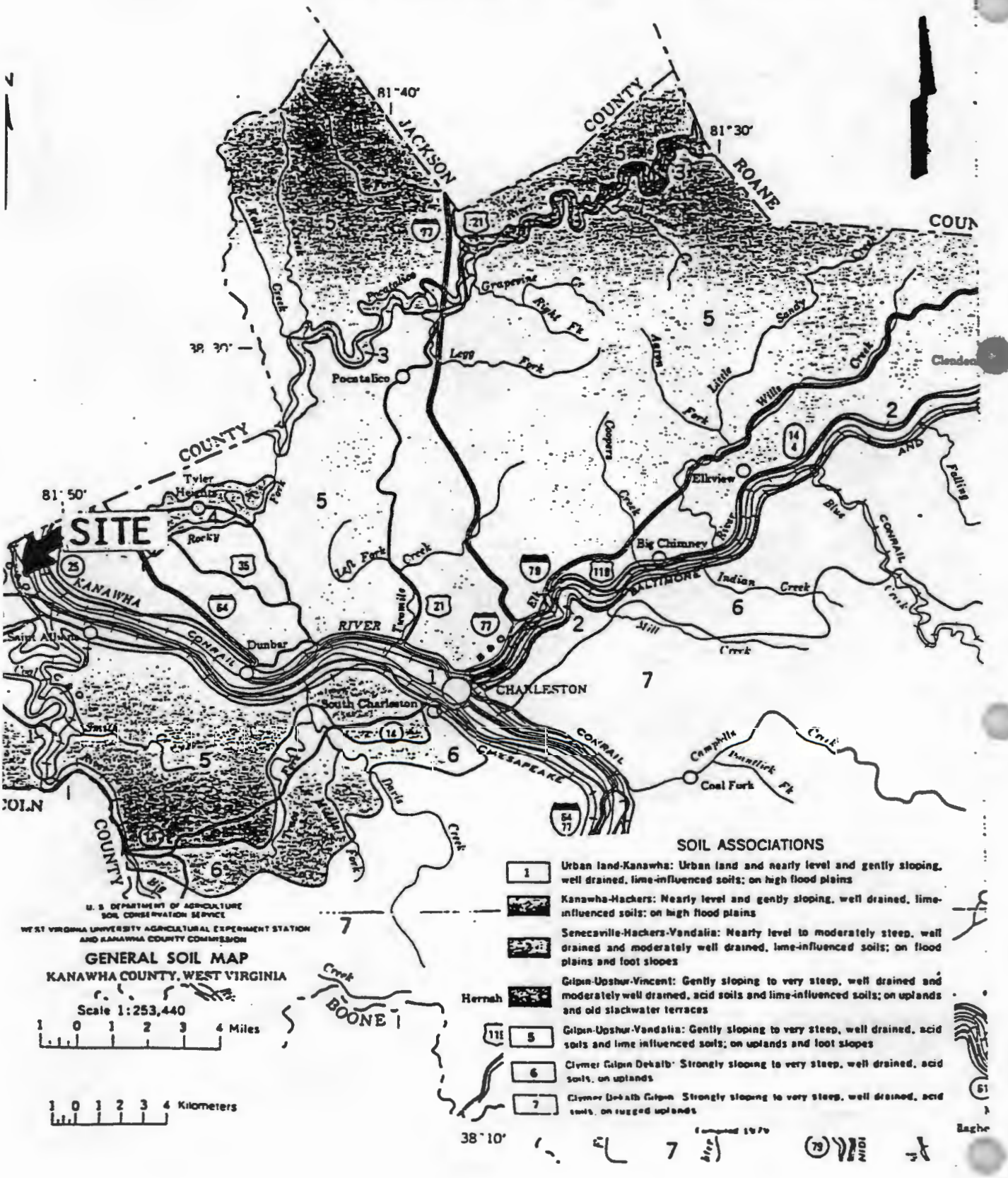
SCALE 1:250,000

5 0 5 10 15 Statute Miles

5 0 5 10 15 20 Kilometers

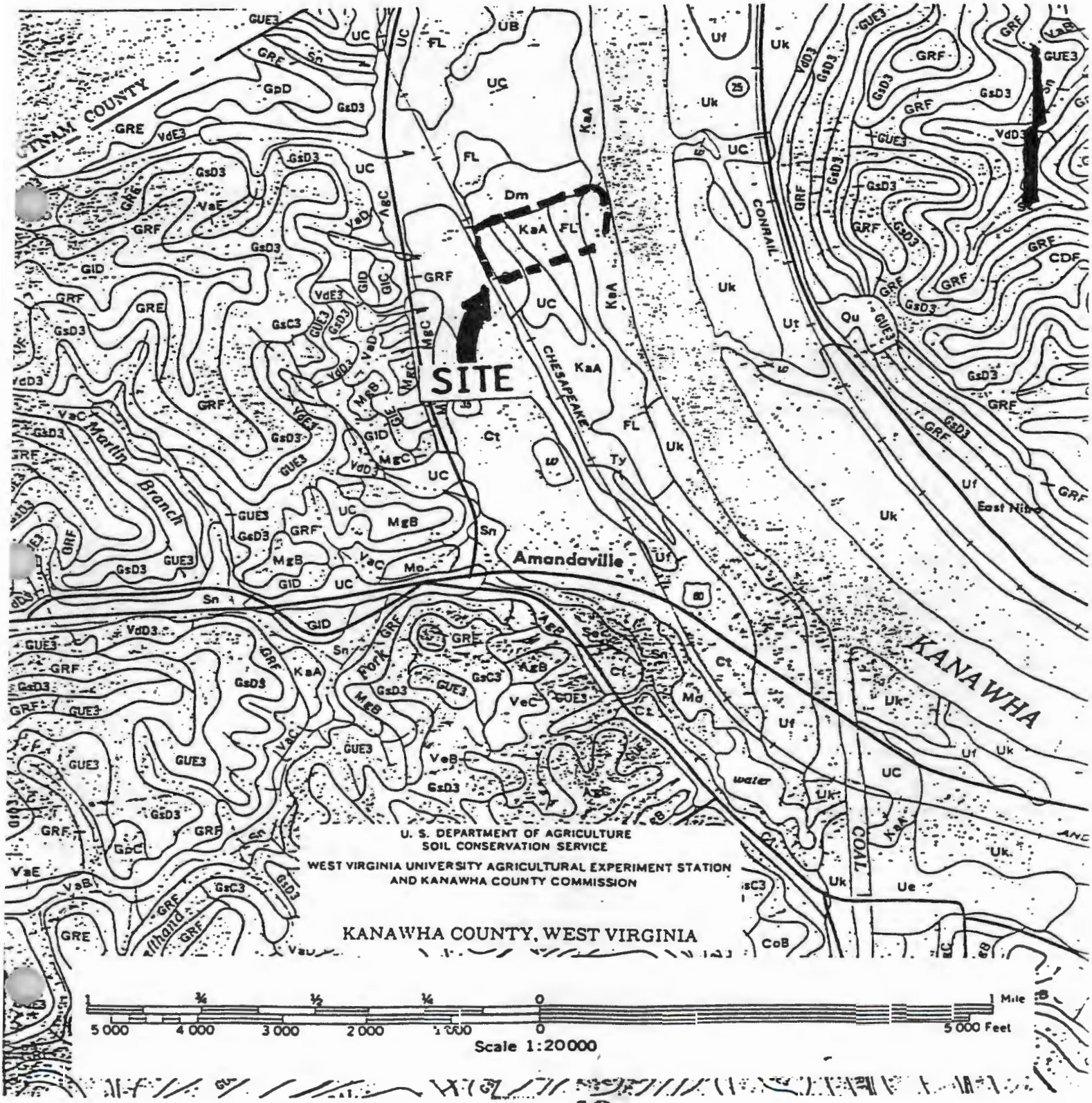
MARLAING ADDITION
GENERAL SOIL MAP

FIGURE No. 6



MARLAING ADDITION
SITE SOIL MAP

FIGURE No. 7



MARLAING ADDITION
SOIL LEGEND

FIGURE No. 8

*The first letter, always a capital, is the initial letter of the soil name. The second letter is a capital if the mapping unit is broadly defined; otherwise, it is a small letter. The third letter, always a capital A, B, C, D, E, or F shows the slope. Most symbols without a letter are those of nearly level soils; however, some are for soils or miscellaneous areas that have a considerable range of slope, but have similar use and interpretations. A final number, 3 shows that the soil is severely eroded.

NAME	SYMBOL	NAME
Allegheny loam, shale substratum, 3 to 8 percent slopes	LaD	Laidig channery sandy loam, 15 to 25 percent slopes
Allegheny loam, shale substratum, 8 to 15 percent slopes	LaE	Laidig channery sandy loam, 25 to 35 percent slopes
	LdB	Laidig channery loam, 3 to 8 percent slopes
Clymer loam, 10 to 20 percent slopes	LdC	Laidig channery loam, 8 to 15 percent slopes
Clymer-Dekalb complex, moderately steep		
Clymer-Dekalb complex, steep	MgB	Monongahela silt loam, 3 to 8 percent slopes
Clymer-Dekalb complex, very steep	MgC	Monongahela silt loam, 8 to 15 percent slopes
Coolville silt loam, 3 to 10 percent slopes	Mo	Moshannon silt loam
Coolville silt loam, 10 to 20 percent slopes		
Coolville silty clay loam, 10 to 20 percent slopes, severely eroded	Qu	Quarries
Cotaco loam		
	Se	Senecaville silt loam
Dumps	Sn	Sensabaugh silt loam
Fluvaquents	Ty	Tyler silt loam
Gilpin silt loam, 10 to 20 percent slopes	UA	Udifluvents, gravelly
Gilpin silt loam, 20 to 30 percent slopes	UB	Udifluvents, loamy
Gilpin silt loam, 30 to 40 percent slopes	UC	Udorthents, smoothed-Urban land complex
Gilpin-Upshur silt loams, 10 to 20 percent slopes	UD	Udorthents, strip mine
Gilpin-Upshur silt loams, 20 to 30 percent slopes	Ue	Urban land
Gilpin-Upshur silt loams, steep	Uf	Urban land-Fluvaquents complex
Gilpin-Upshur silt loams, very steep	Uk	Urban land-Kanawha complex
Gilpin-Upshur complex, 10 to 20 percent slopes, severely eroded	Ut	Urban land-Tyler complex
Gilpin-Upshur complex, 20 to 30 percent slopes, severely eroded		
Gilpin-Upshur complex, steep, severely eroded	VaB	Vandalia silt loam, 3 to 8 percent slopes
	VaC	Vandalia silt loam, 8 to 15 percent slopes
Hackers silt loam, 0 to 3 percent slopes	VaD	Vandalia silt loam, 15 to 25 percent slopes
Hackers silt loam, 3 to 8 percent slopes	VaE	Vandalia silt loam, 25 to 35 percent slopes
	VdC3	Vandalia silty clay loam, 8 to 15 percent slopes, severely eroded
Kanawha fine sandy loam, 0 to 3 percent slopes	VdD3	Vandalia silty clay loam, 15 to 25 percent slopes, severely eroded
Kanawha fine sandy loam, 3 to 8 percent slopes	VdE3	Vandalia silty clay loam, 25 to 35 percent slopes, severely eroded
	VeB	Vincent silt loam, 3 to 8 percent slopes
	VeC	Vincent silt loam, 8 to 15 percent slopes
	VnC3	Vincent silty clay loam, 8 to 15 percent slopes, severely eroded

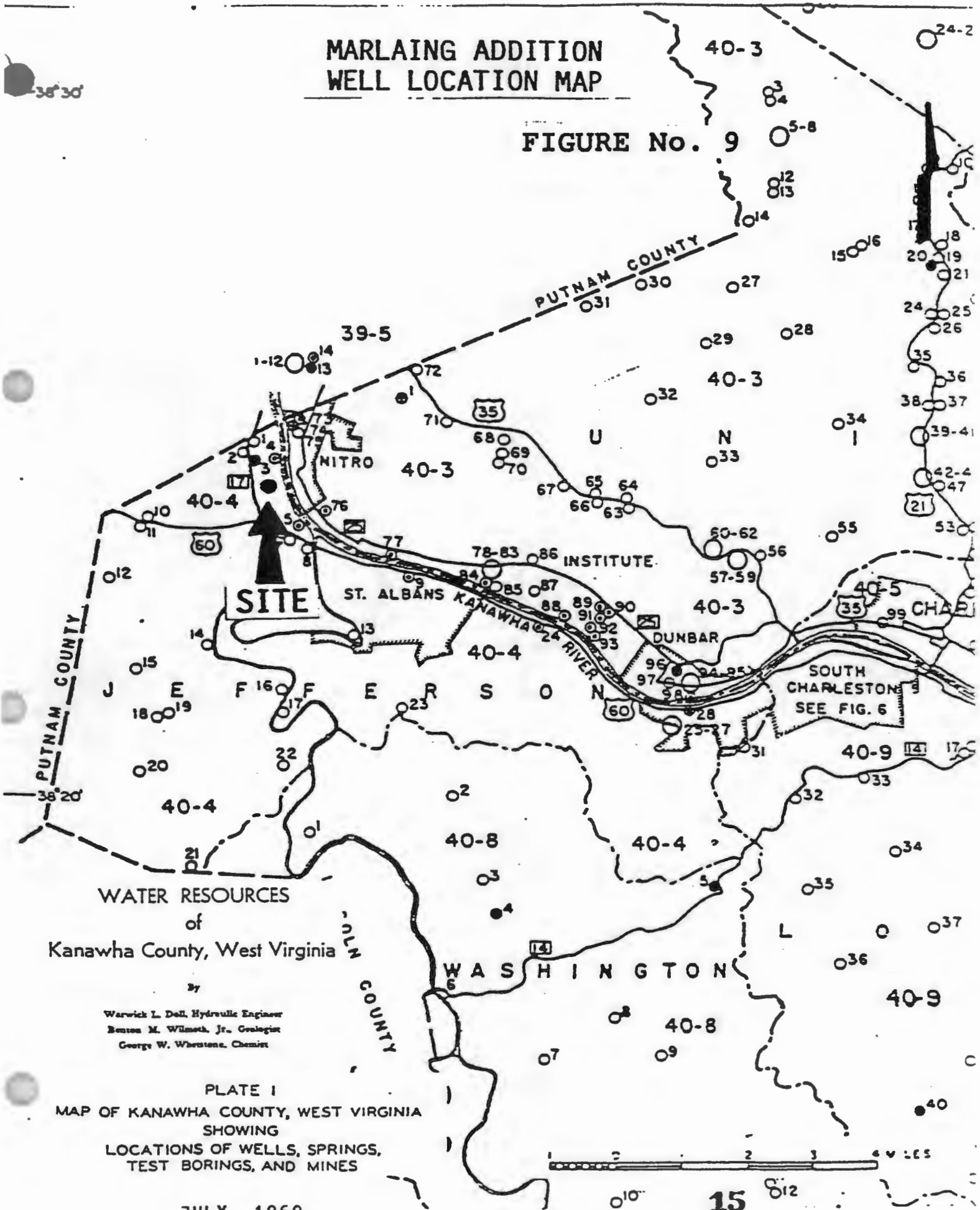
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

WEST VIRGINIA UNIVERSITY AGRICULTURAL EXPERIMENT STATION
AND KANAWHA COUNTY COMMISSION

KANAWHA COUNTY, WEST VIRGINIA

MARLAING ADDITION
WELL LOCATION MAP

FIGURE No. 9



WATER RESOURCES
of
Kanawha County, West Virginia

By

Warwick L. Dell, Hydraulic Engineer
Benton M. Wilmoth, Jr., Geologist
George W. Wherstone, Chemist

PLATE I
MAP OF KANAWHA COUNTY, WEST VIRGINIA
SHOWING
LOCATIONS OF WELLS, SPRINGS,
TEST BORINGS, AND MINES

JULY 1960

MARLAING ADDITION
WELL INFORMATION TABLE
AND TEST BORING LOG

FIGURE No. 10

OWNER OR NAME	TOPOGRAPHIC SITUATION	USE	TYPE OF WELL	TYPE OF PUMP	DIAMETER (inches)	ALTITUDE (feet above sea level)	DEPTH (feet)	DEPTH TO WHICH WELL IS CASED (feet)	PRINCIPAL WATER-BEARING UNIT	WATER LEVEL: BELOW LAND SURFACE (feet)	WATER LEVEL: DATE	YIELD (gpm)	DRAWDOWN (feet)	DATE WELL COMPLETED	REMARKS
ICT															
.e Lovejoy	V	D	Du	B,H	36	607	12		Quaternary alluvium	3	1-8-57			1935	Never dry. Quality, fair; Cl 25 ppm.
Tompkins	V	D	Dr	J,E	6	600	96		Conemaugh Series	1	1-15-57			1930	Adequate. Quality, good; Cl 15 ppm; temp. 55°F.
ete Supply	V	I	Dr	T,E	6	597	117		do	25.50	do			1954	Adequate; average daily pumpage for concrete mixing 6,000 gal. Quality, good; also used for drinking; Cl 25 ppm; see chemical analysis; temp. 55°F.
Geological cy	V	Tb	Dr	H	2	585	52		Quaternary alluvium	22.50	5-29-57			1957	Power-auger test boring. See log and quantitative analysis of sand.
do	V	Tb	Dr	H	2	585	54		do	26	do			1957	Do.
idd	V	D,A	Dr	H	6	597	96		Conemaugh Series	29.00	1-17-57			1946	Adequate; abandoned 1946. Quality, fa Cl 35 ppm; temp. 56°F.
Pearson	V	D	Dr	B,H	10	597	60		Quaternary alluvium	27.50	do			1935	Adequate. Quality, good; Cl 40 ppm; temp. 56°F.
m Kidd	V	D	Dr	do	6	590	36		do	25.10	do			1922	Adequate; reported to pump sand occasionally. Quality, good; Cl 15 ppm temp. 56°F.
Geological y	V	Tb	Dr	H	2	590	52		do	27	5-29-57			1957	Power-auger test boring. See log and quantitative analysis of sand.
Cox	V	D	Dr	J,E	6	720	130		Conemaugh Series	10	6-24-57			1947	Adequate. Quality, good.
Wiesman	V	D	Dr	do	6	745	60		do	17	do			1947	Inadequate when nearby wells are pumpe Quality, good.
wards	V	D	Dr	do	6	690	53		do	25	do			1950	Adequate. Quality, good.
Pearson	V	D,A	Dr	S,E	6	600	90	40	do	40	7-27-57			1953	Adequate abandoned 1955. Quality, fa
Hasley	V	D	Dr	B,H	6	600	95		do	38	6-25-57			1940	Adequate for 3 families. Quality, goo
Cyrus	V	D	Dr	J,E	6	650	85		do	28	6-24-57			1953	Adequate. Quality, good; Cl 790 ppm.
Vorpe	V	D	Dr	do	6	650	170	40	Allegheny Series	35	7-27-57			1952	Inadequate. Quality, good.
ritchard	V	D	Dr	do	6	595	103	40	do	40	7-25-57			1955	Adequate. Quality, good.
Sutton	V	D	Dr	do	6	650	90		Conemaugh Series	20	do			1957	Do.
Myles	V	D	Dr	do	6	650	127		do	6	6-24-57			1957	Adequate. Quality, fair; reported to contain some iron; Cl 20 ppm.
White	V	D	Dr	do	6	690	32		do	1	do			1956	Adequate. Quality, good; Cl 20 ppm.
Stutter	V	D	Dr	do	6	710	39		do	16	6-25-57	30	0	1954	Adequate; bailed 30 gpm with no apparent drawdown. Quality, good Cl 15 ppm.
Akers	V	D	Dr	B,H	6	620	95		Allegheny Series	45	do			1953	Adequate. Quality, good; Cl 20 ppm.

Test boring 40-4-4

Altitude of land surface: 597 ft. above mean sea level.
Sample log by B. M. Wilmoth.

Quaternary System			
Clay, silty, medium-brown	23	23	Static water level 22.50 ft.
Sand, fine-grained, light- to medium-brown, some clay	13.5	36.5	3 inches of stiff clay at 31 ft.
Gravel	1	37.5	No sample.
Sand, medium-grained, light- to medium-brown, some clay	14.5	52	3 inches of clay at 45 ft. Bedrock at 52 ft.

By
Warwick L. Dell, Hydraulic Engineer
Boston M. Wilmoth, Jr., Geologist

the major water bearing zones in the alluvium. Thickness is limited except along the lower mainstream of the Kanawha River and Teays Valley area. Wells in this unit typically yield between 1 and 160 gallons per minute, and well depths range from 7-72 feet. (7)(11)

Due to the site's location in the alluvium the exact depth to groundwater is unknown but it is expected to be 20-30 feet below the surface. This site is not located within a karst terrain.

According to the "Water Resources of Kanawha County, West Virginia 1960" (11) and "Ground Water in Mason and Putnam Counties 1966" (12) approximately 194 people within 4 miles of the site utilize groundwater as the major source of water. However, this data is 30-35 years old and it is believed that most, if not all of these wells are no longer in use. (10, 11)

The nearest wells to this site, according to Water Resources of Kanawha County, are two wells approximately 2000' north of the site. Well 40-4-3 is 117 feet deep and has a surface elevation of 597 feet AMSL with water 25.5 feet below land surface. Completed in 1954 the well was reported to be of good quality for drinking and concrete mixing. Currently; however, this well is not used for drinking purposes. Average daily pumping is reported at 6,000 gallons per day (GPD). Well 40-4-4, belonging to the U.S. Geological Survey was completed in 1957 and is used as a test bore only. It has a surface elevation of 597 feet AMSL, a total depth 52 feet with a water level of 22.5 feet below the surface, and is located in the Quaternary Alluvium. Numerous other domestic wells were reported within 4 miles of the site utilizing predominately the Quaternary Alluvium and the Conemaugh Series, with reported depths ranging from 12 feet to 340 feet and water levels ranging from 1 foot to 118 feet below land surface. (10) Based on this data, the depth to the shallowest aquifer is approximately 1 foot.

F. Sensitive Environments

Two state rare plant species are on record as being within a four-mile radius. Slender crabgrass (Digitaria filiformis) and Gyandotte beauty (Synandra hispidula). Also within a four mile radius are several wetland areas. Most are river slough-backwater areas (Tackett Creek, Gallatin Branch and Scary Creek). A marsh is also located along Gallatin Branch.

There are several rare species and wetland areas within 15 miles downstream. River slough-backwater areas are located at Armour Creek, Bills Creek, Rock Branch, Gauno Creek, Little Gauno Creek, Second Branch and a few unnamed tributaries to the Kanawha river. About two miles upstream of Winfield is the Winfield

Swamp. This area contains the following rare species:

Swamp Loosestrife	Decodon verticillata
Red-eared slider	Trachemys scripta elegans
Spotted pondweed	Potamogeton Pulcher
Large marsh St. John's wort	Hypericum tubulosum
A sedge	Carex typhina
Columbia water-meal	Wolffia columbiana
Water-meal	Wolffia papulifera

One other species within 15 miles downstream is the Map turtle (Graptemys geographica). (See Appendix D WVDNR Heritage Trust File review and the attached Sensitive Environments map)

G. Water Supply

The West Virginia Water Company provides a public water supply in the site area. Approximately 12,774 people are supplied public water by the West Virginia Water Co. within four miles of the site. The West Virginia Water Co. utilizes a surface water intake located on the Elk River approximately 14.17 miles upstream of the site, as the source of its public water supply. (13)

The Saint Albans Water Company also provides a public water supply in the site area. Approximately 16,740 people are supplied by the Saint Albans Water Company within four miles of the site. The Saint Albans Water Company utilizes a surface water intake on the Coal River in St. Albans, WV., approximately 1.5 miles upstream from the site as the source of its public supply. (13)

Four additional Public Service Districts (PSD's) (Kanawha Orchard PSD, Lake Orchard PSD, South Putnam PSD and Washington PSD, serving 15,690 persons) supply a small portion of the study area. (4)

There are no surface water intakes within 15 miles downstream of this site's probable point of entry into the Kanawha River.

III. Demographics

The population distribution for the site area is as follows:

109 people within 1/4 mile, 1,416 people within 1/2 mile, 4,389 people within 1 mile, 11,743 people within 2 miles, 21,868 people within 3 miles and 28,099 people within 4 miles. (9)(13) Population calculation is based on 1990 US Census County Block Maps of Kanawha and Putnam Counties, West Virginia.

There is total of 74 people residing within this subdivision. Since this site is a residential subdivision, the nearest resident is on site. (1)

Five schools are located within 4 miles of the site. However, there are no schools or daycare facilities on site or within 200 feet of this subdivision. (1)

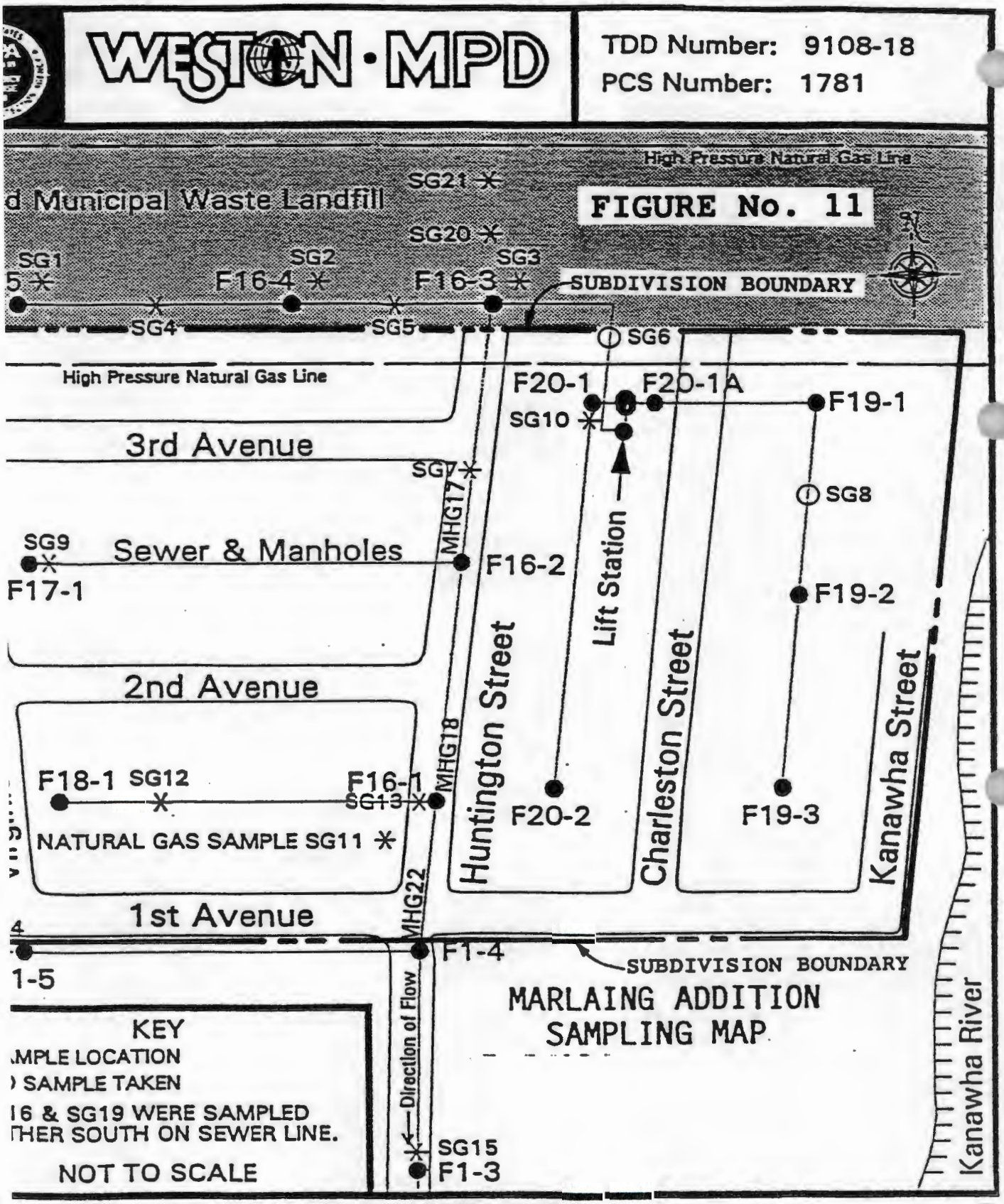
IV. Site History

During April 1991 a repair garage in the Marlaing Addition of Saint Albans exploded and burst into flames apparently caused by explosive gases in a newly laid sanitary sewer system in the community. The Greater Saint Albans Public Service District (GSA) owner of the system obtained samples of the gases for analysis to determent the source. After the garage explosion , Mountaineer Gas repaired numerous leaks in the service lines in the community.
On August 20, 1991 the USEPA Emergency Response Center in Wheeling West Virginia. was contacted by the WVDNR and GSA. The Region III Technical Assistance Team (TAT), was directed to preform an emergency assessment of the situation. TAT arrived in Saint Albans on August 21, 1991 and was informed that none of the residents were connected to the system and two of the manholes with the highest levels of explosive gas were isolated from the rest of the system. GSA also informed TAT that a 670 foot section of the line had been laid through an inactive municipal and industrial solid waste landfill. This landfill was determined to have operated between the years of 1950 and 1975 and is approximately 10 acres in size. TAT preformed air monitoring on the isolated manholes and observed OVA readings greater than 1,000 ppm, Hnu readings up to 7.5 meter units, CGI oxygen readings between 12 and 19 percent and CGI readings of 80 to 100 percent of the Lower Explosive Limit (LEL) Samples were obtained from these two manholes for volatile organics analysis.

Analytical data was received by TAT on September 2, 1991 and trace levels of volatile organics were detected. These organic compounds are similar to those found in solid waste landfills. The Region III OSC directed TAT to prepare a sampling plan to include sampling of landfill gases, residential soil gases, sewer manhole gases and natural gas.

Prior to the soil gas sampling, TAT revisited the site to survey the sampling grid. During this visit, samples were collected at manholes F16-2 and F16-2, air monitoring on these manholes continue to show CGI oxygen levels at 15% and combustable gas levels greater than 100% of LEL. It was also observed that the organic based sealant material used to seal joints in manhole F16-3, was flowing as a liquid on the inside of the manhole. This was believed to be caused by the organic vapors which were found in the manhole.

On October 22, 1991 the Region III Emergency OSC and TAT conducted a preassessment at the site. At that time , it was determined that no immediate threat to human health, welfare or the environment existed. During this preassessment TAT preformed additional air monitoring on the Marlaing Addition sewer system manholes, and obtained readings with the CGI of 18 percent oxygen and 100 percent of the LEL, and 1,000 ppm with the OVA. The General Manager of GSA was informed by the OSC of his responsibility of the completion of an investigation into the problem.



SAMPLING MAP
Marlaing Addition Gas Release
St. Albans, Kanawha County, West Virginia

A sampling assessment was preformed at the site by TAT during the period between October 30 and November 2, 1991. These samples were analyzed for volatile organics and low boiling compounds. Thirteen of the manholes in the sewer system were air monitored, and three manholes had the following readings, manhole F1-4 OVA readings greater than 1,000 ppm CGI oxygen levels 2-15% and CGI LEL greater than 100%, manhole F16-1 OVA readings greater than 1,000 ppm CGI oxygen levels 2-13% and CGI LEL greater than 100%, manhole F16-2 OVA readings greater than 1,000 ppm CGI oxygen levels 2-11% and CGI LEL greater than 100%. At that time it was determined that these three manholes required sampling.

Analytical data was received on November 12, 1991 for the sampling assessment. Volatile organic compounds were detected at trace levels (see APPENDIX B Analytical Data), In several of the samples high concentrations of methane were detected, Methane is a large constituent of both landfill and natural gas.

In a memorandum from EPA OSC Jerry Saseen to EPA Construction Grants Section, landfill and natural gas constituents were compared to help determine the source of the gases at at the Marlaing Addition. Both of these gases have generally low concentrations of volatile organic compounds (benzene, the highest at less than .003 percent). Also both types of gases have relatively high concentrations of Methane ranging from 28 to 75 percent. Methane in the samples taken at the Marlaing Addition was detected between 0.53 to 75 percent. Other constituents of landfill and natural gas (ethane, propane, butane, pentane and hexane) were also detected. An exact source of the gas was unable to be identified with the information available. At that time it was determined that EPA Construction Grants in cooperation with WVDEP Construction Assistance will be taking the lead role in determining decisions and actions for the site.

Currently Mountaineer Gas and the Greater Saint Albans Public Service District, have each obtained private consultants to individually determine the source of the explosive gases at the site. At this time nothing conclusive has been determined by either of the parties involved. (8)

V. Known or Potential Hazards

The sites primary hazard is the presence of explosive gases in sanitary sewer lines located beneath the site. These gases were initially identified when a garage exploded in April, 1991. Air monitoring and sampling conducted by the USEPA Region III TAT revealed that the gases were landfill gas, from an inactive adjacent solid waste landfill or natural gas leaking from high pressure and supply lines in the area or a combination of the two. These explosive gases have demonstrated that a fire and explosion hazard does exist, therefore placing the areas residents, workers private and commercial property in danger. (8)

Significant concentrations of Benzene, Toluene, Xylene and Ethyl benzene along with several other organic vapors were identified in the soil gas and manhole gas samples taken by USEPA Region III TAT. These compounds also pose a threat to the residents due to the potential of air migration-inhalation and direct contact. Flora and Fauna at the site may also potentially be exposed to the organic vapors by direct contact. (See Appendix B for Analytical Data)

VI. Summary and Recommendations

The Marlaing Addition, located just north of Saint Albans, West Virginia, is the site of an accumulation of explosive gases in the soil and in a newly laid sanitary sewer line. The first indication of explosive gases was in April, 1991, when a residential garage located in the area exploded.

Initial EPA contact was made by the WVDNR and the Greater Saint Albans Public Service District (GSAPSD) on August 20, 1991. The USEPA Region III Emergency OSC directed the Region III TAT to conduct an emergency assessment of the situation. During the emergency assessment, two possible sources of the explosive gases were identified. First, a high pressure natural gas transdistribution line and its service lines and second, an inactive landfill, both directly adjacent to the North of the Marlaing Addition.The USEPA also conducted subsequent assessments to determine if an immediate threat to human health and the environment existed, and to sample the gases found in the sewer lines, soil and the natural gas service lines.

Currently the exact location of the source has not been determined. Since the problem was initially identified, the local gas supplier has repaired numerous leaks in its service lines. Additional surveys have also been conducted by the West Virginia Gas Pipeline Safety/Public Service Commission (WVGPS/PSC) without clearly determining the source. Constituents of landfill gases have been identified in the samples, but have not indicated that the source is the adjacent landfill.

USEPA Constructions Grants has taken the government lead role for the site, with GSAPSD and Mountaineer Gas conducting investigations into the Marlaing Addition Gas Release. It is reccomended that no further pre-remedial action be taken at this time.

VII References / Sources of Information

1. U.S.G.S. St. Albans, WV. 7.5 Minute Series Topographic Map, 1978; United States Department of the Interior Geologic Survey.

2. Soil Survey of Kanawha County, West Virginia, U.S.D.A. Soil Conservation Service in cooperation with the West Virginia University Agricultural Experiment Station and the Kanawha County Commission.

3. United States Department of Agriculture Soil Conservation Services, Erosion and Sediment Control Handbook for developing areas, West Virginia.

4. West Virginia Bureau of Health and Human Services, OEHS/Environmental Engineering Division, Community Public Water Supplies July 23, 1991.

5. U.S.G.S. Map of Flood Prone areas, 1973, U.S. Department of Interior Geologic Survey in cooperation with U.S. Department of Housing and Urban Development, Federal Insurance Administration.

6. Geologic Map of West Virginia, 1968, West Virginia Geological and Economic Survey.

7. Groundwater Hydrology of the Minor Tributary Basins of The Kanawha River, 1984, G. M. Ferrell, U.S. Geological Survey in cooperation with and published by West Virginia Department of Natural Resources.

8. POLREP #1 - 7 - Marlaing Addition Gas Release, Kanawha County, WV.

9. U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Estimates for Households, for Counties; July 1, 1985.

10. Water Resources of Kanawha County, West Virginia, July, 1960, Paul H. Price.

11. Groundwater in Mason and Putnam Counties, June 15, 1966, Benton M. Wilmouth.

12. U.S. Census Maps, 1990, Kanawha and Putnam County.

13. Sattler, R. E. Jr., WVDNR, 1990, EP1 Preliminary Assessment of VIMASCO Corporation, Nitro, Putnam County, West Virginia.

14. Remedial Investigation For The Fike Chemicals Site, July 1990, Ebasco Services, EPA Contract Number 68-01-7250.

15. Regional Geomorphology of the United States, 1963, W. D. Thornbury. Published by John Wiley and Sons, Inc.

APPENDIX A

EPA FORM 2070-12

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WV	494

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Marlaing Addition	First Avenue North				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
St. Albans	WV	25177	Kanawha	039	03
09 COORDINATES LATITUDE	**LONGITUDE**				
3 8 33 1 7.N	0 8 1 5 1 2 1 W				

10 DIRECTIONS TO SITE (Starting from nearest public road)

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)			
Greater St. Albans Public Service District	505 6th Street			
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**	
Saint Albans	WV	25177	(304) 772-3941	
07 OPERATOR (If known and different from owner)	**08 STREET (Business, mailing, residential)**			
Greater St. Albans Public Service District	505 6th. Street			
09 CITY	**10 STATE**	**11 ZIP CODE**	**12 TELEPHONE NUMBER**	
St. Albans	WV	25177	304 722-3941	

13 TYPE OF OWNERSHIP (Check one)
XX A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) XX C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☐ A. RCRA 3001 DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) X C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
X YES DATE 10 31 92 (MONTH DAY YEAR)
☐ NO

BY (Check all that apply)
X A. EPA XX B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
X E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): Weston

02 SITE STATUS (Check one)	03 YEARS OF OPERATION		
X A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN	1991 (BEGINNING YEAR)	N/A (ENDING YEAR)	☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Low Boiling Compounds and Volatile Organics

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Extreme potential for Explosion and possible damage to environment, population and property.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) X C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)			03 TELEPHONE NUMBER
Thomas W. Blake	WVDEP Office of Waste Management			304 558-2745
04 PERSON RESPONSIBLE FOR ASSESSMENT	**05 AGENCY**	**06 ORGANIZATION**	**07 TELEPHONE NUMBER**	**08 DATE**
Rusty T. Joins	WVDEP	Waste Mgt.	304 558-2745	08 06 92 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WV	494

TE STATES, QUANTITIES, AND CHARACTERISTICS

CAL STATES (Check all that apply)

- ☐ SOLID
- ☐ POWDER, FINES
- ☐ SLUDGE
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☒ G. GAS
- ☐ OTHER _____ (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☐ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☒ G. FLAMMABLE
- ☒ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

TE TYPE

RY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
	SLUDGE			
	OILY WASTE			
	SOLVENTS			
	PESTICIDES			
	OTHER ORGANIC CHEMICALS			
	INORGANIC CHEMICALS			
	ACIDS			
	BASES			
	HEAVY METALS			

ARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

ORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
C	Methane (C1H4)	74828		750,000,000	PPbv
C	Ethane (C2H6)	74840		280,000,000	PPbv
	Propane (C3H8)	74986		5,100,000	PPbv
	Butenes (C4H8)			90	PPbv
	Butanes (C4H10)	106978		1,400,000	PPbv
	Hydrocarbon (C5H10)			28,000	PPbv
	Pentanes (C5H12)	109660		370,000	PPbv
	Hydrocarbon (C6H12)			11,000	PPbv
	Hexanes (C6H14)	110543		110,000	PPbv
	Cyclohydrocarbons (C7H10)			30	PPbv
	Hydrocarbon (C7H-14)			13,000	PPbv
	Heptanes (C7H16)	142825		25,000	PPbv
	Hydrocarbon (C8H16)			1,700	PPbv
	Octanes (C8H18)	111659		7,100	PPbv
	Aromatic Hydrocarbon (C9H12)			7,700	PPbv
	Hydrocarbon (C9H16)			160	PPbv

STOCKS (See Appendix for CAS Numbers)

ORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
S			FDS		
S			FDS		
S			FDS		
S			FDS		

ICES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EP and US EPA Files

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WV	494

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☒ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS _____
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☐ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☒ G. FLAMMABLE
- ☒ H. IGNITABLE
- ☒ I. HIGHLY VOLATILE
- ☒ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OOC	Hydrocarbon (C9H18)			1,800	PPbv
OOC	Nonanes (C9H20)	111842		4,600	PPbv
OOC	Hydrocarbons (C10H14)			290	PPbv
OOC	Hydrocarbons (C10H16)			380	PPbv
OOC	Hydrocarbons (C10H18)			500	PPbv
OOC	Hydrocarbons (C10H20)			2,400	PPbv
OOC	Decanes (C10H22)	124185		1,900	PPbv
OOC	Hydrocarbon (C11H20)			820	PPbv
OOC	Hydrocarbons (C11H22)			560	PPbv
OOC	Hydrocarbons (C11H24)			40	PPbv
OOC	Undecanes (C11H24)	1120214		4,000	PPbv
OOC	Hydrocarbons (C12H24)			380	PPbv
OOC	Dodecanes (C12H26)	112043		3,100	PPbv
OOC	Hydrocarbons (C13H28)			240	PPbv
OOC	Freon 12 (CCl2F2)	75-71-8		140	PPbv
OOC	Freon 22 (CHClF2)	75-45-6		210	PPbv

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

WV DEP and US EPA Files

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WV	494

E STATES, QUANTITIES, AND CHARACTERISTICS

AL STATES (Check all that apply)

- JD
- VDER, FINES
- DGE
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☒ G. GAS
- IER _____ (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS _____
- CUBIC YARDS _____
- NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☐ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☒ G. FLAMMABLE
- ☒ H. IGNITABLE
- ☒ I. HIGHLY VOLATILE
- ☒ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

E TYPE

Y	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
	SLUDGE			
	OILY WASTE			
	SOLVENTS			
	PESTICIDES			
	OTHER ORGANIC CHEMICALS			
	INORGANIC CHEMICALS			
	ACIDS			
	BASES			
	HEAVY METALS			

DOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

IY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	1,2-Dichlorobenzene	95-50-1		2.3	PPbv
	Tri Chloroethene			20	PPbv
	Carbon Disulfide	75-15-0		650	PPbv
	Dichloromethane	75-09-2		6	PPbv
	Ethulbenzene	100-41-4		1200	PPbv
	Chloroethane			21	PPbv
	1,4-Dichlorobenzene	106-46-7		46	PPbv
	Acetone	67-64-1		97	PPbv
	cis 1,2-Dichloroethene			18	PPbv
	trans 1,2-Dichloroethene			2.2	PPbv
	Chlorobenzene	108-90-7		260	PPbv
	Benzene	71-43-2		28,000	PPbv
	Tolvene	108-88-3		16,000	PPbv
	Xylenes Total	1330-20-7		5,900	PPbv
	1,1-Dichloroethane	75-34-3		22	PPbv
	Chlorform	67-66-3		12	PPbv

OCKS (See Appendix for CAS Numbers)

IY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
			FDS		
			FDS		
			FDS		
			FDS		

ES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

WV DEP and US EPA Files

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WV	494

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☒ G. GAS

02 WASTE QUANTITY AT SITE

(Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☐ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☒ G. FLAMMABLE
- ☒ H. IGNITABLE
- ☒ I. HIGHLY VOLATILE
- ☒ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OOC	Tetrachloroethane	25322207		9.9	PPbv
OOC	Trichloromethane (F-11)			16	PPbv
OOC	1,3-Dichlorobenzene	541-73-1		0.80	PPbv
OOC	1,1,1-Trichloroethane	71-55-6		2.5	PPbv
OOC	Styrene	100-42-5		3	PPbv

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

WV DEP and US EPA Files

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WV	494

ZARDOUS CONDITIONS AND INCIDENTS

☐ A. GROUNDWATER CONTAMINATION
OPULATION POTENTIALLY AFFECTED: 0
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

es may breakdown in ground water. No known ground water users

☐ B. SURFACE WATER CONTAMINATION
OPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None Known

☐ C. CONTAMINATION OF AIR
OPULATION POTENTIALLY AFFECTED: _____
02 ☒ OBSERVED (DATE: See Below) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

il, August 21, October 18, October 23, October 30-November 2, 1991, June 10, 1992

☐ D. FIRE/EXPLOSIVE CONDITIONS 109
OPULATION POTENTIALLY AFFECTED: _____
02 ☒ OBSERVED (DATE: See Below) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

1, 1991, August 21, 1991, October 18, 1991, October 23, 1991, October 30-November 2,
, June 10, 1992. Garage explosion and explosive conditionsidentified in manholes
ne site. Population is within 1/4 mile.

☐ E. DIRECT CONTACT
OPULATION POTENTIALLY AFFECTED: 109
02 ☒ OBSERVED (DATE: April 1991) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

s found on manholes could migrate through the air. Pouplation is within one fourth mile.

☐ F. CONTAMINATION OF SOIL 109
EA POTENTIALLY AFFECTED: _____ (Acres)
02 ☒ OBSERVED (DATE: See Below) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

October 30-November 2, 1991. Confirmed soil contamination with explosive
s. Population is within 1/4 mile.

☐ G. DRINKING WATER CONTAMINATION
PULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Known

☐ H. WORKER EXPOSURE/INJURY
ORKERS POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

☐ POPULATION EXPOSURE/INJURY 109
PULATION POTENTIALLY AFFECTED: _____
02 ☒ OBSERVED (DATE April 1991) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

e explosion in Marlaing Addition, beileved to be due to the explosive gases
in the soil. Population is within 1/4 mile.

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EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WV	494

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES — 02 ☒ OBSERVED (DATE: April 1991) ☐ POTENTIAL ☐ ALLEGED
(Spills/runoff/standing liquids/leaking drums)
03 POPULATION POTENTIALLY AFFECTED: 109
04 NARRATIVE DESCRIPTION

Explosive gases collecting in sewer lines. Pouplation is within one fourth mile.

01 ☐ N DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☒ OBSERVED (DATE: See Below) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Date: October 30, November 2, 1991. Documented explosive potential in sanitary sewers.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 109

IV. COMMENTS

Until current investtigation determines a source of the gases, no further pre-remedial action is recommended.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

WVDEP AND EPA files

EPA FORM 2070-12 (7-81)

APPENDIX B

Analytical Data

St. Albans Sewer

SENT BY:ROY F WESTON SFEP ; 9- 9-91 11:02AM ; 3042337983→ 3043437509;# 1

COPY

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 9

To TOM BLAKE	From CHUCK Fisher
Co.	Co.
Dept.	Phone #
Fax #	Fax #

COAST-TO-COAST ANALYTICAL SERVICES

San Luis Obi:

San Luis Obispo
141 Suburban Rd

'alparaiso, IN

543-2353
543-2685

CLIENT: Marian Murphy
Roy F. Weston, Inc. TAT Office
5 Underwood Ct.
Delran, NJ 08075-1229

Lab Number : M-3218-1
Project : 1781 Marlaing Addition

Analyzed : 08/24/91
Analyzed by: EA
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Manhole #F16-2	Air	Charles Fisher	08/21/91	08/23/91

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT ug/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				
Acetone	1.	6.2	16.	
Benzene	0.1	2.9	10.	
Bromodichloromethane	0.1	ND	ND	
Bromomethane (Methyl Bromide)	0.2	ND	ND	
Bromoform	0.1	ND	ND	
1,3-Butadiene	0.1	ND	ND	
2-Butanone (MEK)	0.2	ND	ND	
Carbon Disulfide	0.2	12.	41.	
Carbon Tetrachloride	0.1	ND	ND	
Chlorobenzene	0.1	ND	ND	
Chloroethane (Ethyl Chloride)	0.2	ND	ND	
2-Chloroethyl Vinyl Ether	1.	ND	ND	
Chloroform	0.1	ND	ND	
Chloromethane (Methyl Chloride)	0.1	ND	ND	
Dibromochloromethane	0.1	ND	ND	
1,2-Dibromoethane (EDB)	0.1	ND	ND	
1,2-Dichlorobenzene	0.2	ND	ND	
1,3-Dichlorobenzene	0.2	ND	ND	
1,4-Dichlorobenzene	0.2	ND	ND	
1,1-Dichloroethane	0.1	ND	ND	
1,2-Dichloroethane (EDC)	0.1	ND	ND	
1,1-Dichloroethene	0.1	ND	ND	

San Luis Obispo Division is certified by CA Department of Health Services: ELAP #1398
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

08/31/91
MSD1/W53C
LRH/ge/mjd/rcz
RH24M1
CC: Chuck Fisher
Roy F. Weston, Inc.
141 Waddles Run Rd.
[illegible] WV 26003

RECEIVED
SEP 09 1991
[illegible]ENT OF NATURAL RES[illegible]

ASTAL
NALYTICAL
ERVICES

Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

LIENT: Marian Murphy
Roy F. Weston, Inc. TAT Office
5 Underwood Ct.
Delran, NJ 08075-1229

Lab Number : H-3218-1
Project : 1781 Marlaing Addition

Analyzed : 08/24/91
Analyzed by: EA
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

AMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
anhole #F16-2	Air	Charles Fisher	08/21/91	08/23/91

ONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT ug/cu M	NOTE
cis-1,2-Dichloroethene	0.1	ND	ND	
trans-1,2-Dichloroethene	0.1	ND	ND	
Dichloromethane	0.2	2.4	9.	
1,2-Dichloropropane	0.1	ND	ND	
cis-1,3-Dichloropropene	0.1	ND	ND	
trans-1,3-Dichloropropene	0.1	ND	ND	
Ethylbenzene	0.2	7.2	34.	
2-Hexanone	0.1	ND	ND	
4-Methyl-2-Pentanone (MIBK)	0.1	ND	ND	
Styrene	0.2	8.	37.	
1,1,2,2-Tetrachloroethane	0.1	ND	ND	
Tetrachloroethene (PCE)	0.1	22.	160.	
Toluene	0.2	20.	93.	
1,1,1-Trichloroethane (TCA)	0.2	1.	6.1	
1,1,2-Trichloroethane	0.2	ND	ND	
Trichloroethene (TCE)	0.1	6.5	38.	
Trichlorofluoromethane (F-11)	0.2	1.3	8.	
Trichlorotrifluoroethane (F-113)	0.2	ND	ND	
Vinyl Acetate	1.	ND	ND	
Vinyl Chloride	0.2	ND	ND	
Xylenes, Total	0.2	55.	260.	
Percent Surrogate Recovery			107.	

n Luis Obispo Division is certified by CA Department of Health Services: ELAP #1598
ESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

/31/91
D1/W53C
H/ge/mjd/rcz
24M1
: Chuck Fisher
Roy F. Weston, Inc.
141 Waddles Run Rd.
Wheeling, WV 26003

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai, Ph.D., Group Leader

Laurence R. Milpert, Ph.D.
Vice President

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

COAST-TO-COAST ANALYTICAL SERVICES

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San Luis Obispo Division
141 Suburban Road, San Luis Obispo, California 93401
(805) 543-2553
FAX (805) 543-2685

Lab Number : H-3218-2
Project : 1781 Marlaing Addition

CLIENT: Marian Murphy
Roy F. Weston, Inc. TAT Office
5 Underwood Ct.
Delran, NJ 08075-1229

Analyzed : 08/26/91
Analyzed by: EA
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Manhole #F16-1	Air	Charles Fisher	08/21/91	08/23/91

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT ug/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				
Acetone	2.	10.	27.	
Benzene	0.1	2.	6.9	
Bromodichloromethane	0.1	ND	ND	
Bromomethane (Methyl Bromide)	0.2	ND	ND	
Bromoform	0.1	ND	ND	
1,3-Butadiene	0.1	ND	ND	
2-Butanone (MEK)	0.2	ND	ND	
Carbon Disulfide	0.2	12.	42.	
Carbon Tetrachloride	0.1	ND	ND	
Chlorobenzene	0.1	ND	ND	
Chloroethane (Ethyl Chloride)	0.2	ND	ND	
2-Chloroethyl Vinyl Ether	1.	ND	ND	
Chloroform	0.1	ND	ND	
Chloromethane (Methyl Chloride)	0.1	ND	ND	
Dibromochloromethane	0.1	ND	ND	
1,2-Dibromoethane (EDB)	0.1	ND	ND	
1,2-Dichlorobenzene	0.2	ND	ND	
1,3-Dichlorobenzene	0.2	ND	ND	
1,4-Dichlorobenzene	0.2	ND	ND	
1,1-Dichloroethane	0.1	ND	ND	
1,2-Dichloroethane (EDC)	0.1	ND	ND	
1,1-Dichloroethene	0.1	ND	ND	

San Luis Obispo Division is certified by CA Department of Health Services: ELAP #1598
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

08/31/91
MSD1/1W80C
LRH/ach/gd/mjd/rez
HM26M1
CC: Chuck Fisher
Roy F. Weston, Inc.
141 Weddles Run Rd.
Wheeling, WV 26003

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141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

ENT: Marian Murphy
Roy F. Weston, Inc. TAT Office
5 Underwood Ct.
Delran, NJ 08075-1229

Lab Number : H-3218-2
Project : 1781 Marlaing Addition

Analyzed : 08/26/91
Analyzed by: EA
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

PLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
ple #F16-1	Air	Charles Fisher	08/21/91	08/23/91

STITUENT	*PQL ppbv	RESULT ppbv	RESULT ug/cu M	NOTE
s-1,2-Dichloroethene	0.1	ND	ND	
ans-1,2-Dichloroethene	0.1	ND	ND	
hloromethane	1.	6.	24.	
-Dichloropropane	0.1	ND	ND	
s-1,3-Dichloropropene	0.1	ND	ND	
ns-1,3-Dichloropropene	0.1	ND	ND	
ylbenzene	0.2	6.3	31.	
exanone	0.1	ND	ND	
ethyl-2-Pentanone (MIBK)	0.1	ND	ND	
rene	0.2	4.9	23.	
,2,2-Tetrachloroethane	0.1	ND	ND	
rachloroethene (PCE)	0.1	ND	ND	
uene	0.2	92.	380.	
,1-Trichloroethane (TCA)	0.2	1.6	9.4	
,2-Trichloroethane	0.2	ND	ND	
chloroethene (TCE)	0.1	0.8	4.7	
chlorofluoromethane (F-11)	0.2	0.9	4.5	
chlorotrifluoroethane (F-113)	0.2	ND	ND	
yl Acetate	1.	ND	ND	
yl Chloride	0.2	ND	ND	
enes, Total	0.2	55.	260.	
cent Surrogate Recovery			95.	

Luis Obispo Division is certified by CA Department of Health Services: ELAP #1598
ULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

1/91
/LWBOC
scn/gd/mjd/rea
ml
Chuck Fisher
Roy F. Weston, Inc.
141 Waddles Run Rd.
Wheeling, WV 26003

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai, Ph.D., Group Leader

Lawrence R. Hilpert, Ph.D.
Vice President

F WESTON SPER ; 9- 9-91 11:04AM

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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CLIENT: Marian Murphy
Roy F. Weston, Inc. TAT Office
3 Underwood Ct.
Delran, NJ 08075-1229

Lab Number : K-3218-3
Project : 1781 Marlaing Addition

Analyzed : 08/28/91
Analyzed by: QP
Method : E8240 (GC/MS)

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Manhole #F16-2	Aqueous	Charles Fisher		08/23/91

CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
PRIORITY POLLUTANT VOLATILE ORGANICS				1
Benzene	(71432)	0.1	ND	
Bromochloromethane	(74975)	0.1	ND	
Bromodichloromethane	(75274)	0.1	ND	
Bromoform	(75252)	0.2	ND	
Bromomethane (Methyl Bromide)	(74839)	0.1	ND	
Carbon Tetrachloride	(56235)	0.1	ND	
Chlorobenzene	(108907)	0.1	ND	
Chloroethane (Ethyl Chloride)	(75003)	0.1	ND	
Chloromethane (Methyl Chloride)	(74873)	0.1	ND	
2-Chloroethyl Vinyl Ether	(110758)	1.	ND	
Chloroform	(67663)	0.5	ND	
Dibromochloromethane	(124481)	0.1	ND	
1,2-Dichlorobenzene	(95501)	0.1	ND	
1,3-Dichlorobenzene	(541731)	0.1	ND	
1,4-Dichlorobenzene	(106467)	0.1	ND	
Dichlorodifluoromethane	(75718)	1.	ND	
1,1-Dichloroethane	(75343)	0.1	ND	
1,2-Dichloroethane (EDC)	(107062)	0.1	ND	
1,1-Dichloroethene	(75354)	0.1	ND	
cis-1,2-Dichloroethene	(156694)	0.1	ND	
trans-1,2-Dichloroethene	(156605)	0.1	ND	

San Luis Obispo Division is certified by CA Department of Health Services: ELAP #1398
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) EXTRACTED by EPA 5030 (purge-and-trap)

08/31/91
XTRL/28AUG07
MH/bpl/dez
MHZ8CLP
CC: Chuck Fisher
Roy F. Weston, Inc.
141 Waddles Run Rd.
Wheeling, WV 26003

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Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

IENT: Marian Murphy
Roy F. Weston, Inc. TAT Office
5 Underwood Ct.
Delran, NJ 08075-1229

Lab Number : H-3218-3
Project : 1781 Marlaing Addition

Analyzed : 08/28/91
Analyzed by: QP
Method : E8240 (GC/MS)

REPORT OF ANALYTICAL RESULTS

MPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
nhole #F16-2	Aqueous	Charles Fisher		08/23/91

NSTITUENT	(CAS #N)	*PQL µg/L	RESULT µg/L	NOTE
,2-Dichloropropane	(78875)	0.1	ND	
is-1,3-Dichloropropene	(10061015)	0.1	ND	
rans-1,3-Dichloropropene	(10061026)	0.1	ND	
ichlorotrifluoroethane	(306832)	0.1	ND	
thylbenzene	(100411)	0.1	ND	
ethylene Chloride	(75092)	1.	ND	
,1,2,2-Tetrachloroethane	(79345)	0.5	ND	
etrachloroethene (PCE)	(127184)	0.1	ND	
,1,1-Trichloroethane (TCA)	(71556)	0.1	ND	
,1,2-Trichloroethane	(79005)	0.1	ND	
richloroethene (TCE)	(79016)	0.1	ND	
richlorotrifluoroethane (F-113)	(76131)	0.5	ND	
richlorofluoromethane (F-11)	(75694)	0.5	ND	
oluene	(108883)	0.2	ND	
inyl Chloride	(75014)	0.1	ND	
ylenes, Total		0.1	ND	
ercent Surrogate Recovery			92.	

n Luis Obispo Division is certified by CA Department of Health Services: ELAP #1398
ESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

8/31/91
TRL/28AUG07
H/bpl/dez
H28CLP
C: Chuck Fisher
Roy F. Weston, Inc.
141 Waddles Run Rd.
Wheeling, WV 26003

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Barry Lajoie, Group Leader

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

CLIENT: Marian Murphy
Roy F. Weston, Inc. TAT Office
5 Underwood Ct.
Delran, NJ 08075-1229

Lab Number : M-3218-4
Project : 1781 Marlaing Addition

Analyzed : 08/28/91
Analyzed by: QP
Method : EE240 (GC/MS)

REPORT OF ANALYTICAL RESULTS Page 1 of 2

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Manhole #F16-1	Aqueous	Charles Fisher		08/23/91

CONSTITUENT	(CAS #N)	*PQL µg/L	RESULT µg/L	NOTE
PRIORITY POLLUTANT VOLATILE ORGANICS				1
Benzene	(71432)	0.1	ND	
Bromochloromethane	(74975)	0.1	ND	
Bromodichloromethane	(75274)	0.1	ND	
Bromoform	(75252)	0.2	ND	
Bromomethane (Methyl Bromide)	(74839)	0.1	ND	
Carbon Tetrachloride	(56235)	0.1	ND	
Chlorobenzene	(108907)	0.1	ND	
Chloroethane (Ethyl Chloride)	(75003)	0.1	ND	
Chloromethane (Methyl Chloride)	(74873)	0.1	ND	
2-Chloroethyl Vinyl Ether	(110758)	1.	ND	
Chloroform	(67663)	0.5	ND	
Dibromochloromethane	(124481)	0.1	ND	
1,2-Dichlorobenzene	(95501)	0.1	ND	
1,3-Dichlorobenzene	(541731)	0.1	ND	
1,4-Dichlorobenzene	(106467)	0.1	ND	
Dichlorodifluoromethane	(75718)	1.	ND	
1,1-Dichloroethane	(75343)	0.1	ND	
1,2-Dichloroethane (EDC)	(107062)	0.1	ND	
1,1-Dichloroethene	(75354)	0.1	ND	
cis-1,2-Dichloroethene	(156694)	0.1	ND	
trans-1,2-Dichloroethene	(156605)	0.1	ND	

San Luis Obispo Division is certified by CA Department of Health Services: ELAP #1398
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) EXTRACTED by EPA 5030 (purge-and-trap)

08/31/91
XTRL/28AUG06
MH/bpl/dez
HH28CLP
CC: Chuck Fisher
Roy F. Weston, Inc.
141 Waddles Run Rd.
Wheeling, WV 26003

ST-TO-ST
YTICAL
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Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

ENT: Marian Murphy
Roy F. Weston, Inc. TAT Office
5 Underwood Ct.
Delran, NJ 08075-1229

Lab Number : H-3218-4
Project : 1781 Marlaing Addition

Analyzed : 08/28/91
Analyzed by: QP
Method : E8240 (GC/MS)

REPORT OF ANALYTICAL RESULTS

PLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
hole #F16-1	Aqueous	Charles Fisher		08/23/91

STITUENT	(CAS #)	*PQL µg/L	RESULT µg/L	NOTE
2-Dichloropropane	(78875)	0.1	ND	
s-1,3-Dichloropropene	(10061015)	0.1	ND	
ans-1,3-Dichloropropene	(10061026)	0.1	ND	
chlorotrifluoroethane	(306832)	0.1	ND	
hylbenzene	(100411)	0.1	ND	
thylene Chloride	(75092)	1.	ND	
1,2,2-Tetrachloroethane	(79345)	0.5	ND	
trachloroethene (PCE)	(127184)	0.1	ND	
1,1-Trichloroethane (TCA)	(71556)	0.1	ND	
1,2-Trichloroethane	(79005)	0.1	ND	
richloroethene (TCE)	(79016)	0.1	ND	
richlorotrifluoroethane (F-113)	(76131)	0.5	ND	
richlorofluoromethane (F-11)	(75694)	0.5	ND	
oluene	(108883)	0.2	ND	
inyl Chloride	(75014)	0.1	ND	
ylenes, Total		0.1	ND	
rcent Surrogate Recovery			96.	

n Luis Obispo Division is certified by CA Department of Health Services: ELAP #1598
ESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

/31/91
RL/28AUG06
/bpl/dez
28CLP
: Chuck Fisher
Roy F. Weston, Inc.
141 Waddles Run Rd.
Wheeling, WV 26003

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Barry Lajoie, Group Leader

Mary Havlicek, Ph.D.
President

...NTAL PROTECTION AGENCY
Office of Enforcement

CHAIN OF CUSTODY RECORD

Curtis Bldg., 6th & ...
Philadelphia, Pennsylvania 19106

J. NO.	PROJECT NAME
781	MARLAING ADDITION

SAMPLERS: (Signature) Charles W. Fisher

SAMPLE NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SUMA #94145 0	40 mL VOA	SUMA #94145 3				REMARKS
F16-2	8/22/91	1515		✓	MANHOLE #F16-2	3	1	2					
F16-1	8/22/91	1545		✓	MANHOLE #F16-1	3		2	1				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Charles Fisher	8/22/91 1750				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) Kelley Wilson	Date / Time 8/27/91 1220	Remarks FAX ANALYTICAL TO (304) 243-0807 ATTN: CHUCK FISHER	

41

MARLAING ADDITION GAS RELEASE SITE ASSESSMENT (10/30/91 – 11/02/91): VOLATILE ORGANICS

SAMPLE NUMBERS	SG1	SG2	SG3	SG4	SG5	SG7	SG9	
UNITS	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	
Acetone	ND	ND	22.00	12.00	ND	97.00	7.00	
Benzene	86.00	130.00	250.00	1.00	200.00	570.00	2.60	
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	
Bromomethane (Methyl Bromide)	ND	ND	ND	ND	ND	ND	ND	
Bromoform	ND	ND	ND	ND	ND	ND	ND	
1,3-Butadiene	ND	ND	ND	ND	ND	ND	ND	
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	ND	
Carbon Disulfide	21.00	ND	650.00	ND	35.00	20.00	4.40	
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	140.00	13.00	86.00	0.10	180.00	11.00	12.00	
Chloroethane (Ethyl Chloride)	ND	7.60	ND	ND	21.00	ND	ND	
2-Chloroethylvinyl ether	ND	ND	ND	ND	ND	ND	ND	
Chloroform	ND	ND	ND	ND	ND	7.30	ND	
Chloromethane (Methyl Chloride)	ND	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichlorobenzene	0.40	2.30	1.40	ND	1.40	ND	ND	
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	
1,4-Dichlorobenzene	35.00	27.00	23.00	ND	46.00	2.00	3.50	
1,1-Dichloroethane	ND	2.50	ND	ND	0.90	3.60	ND	
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethene	ND	1.20	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethene	ND	14.00	9.50	ND	11.00	18.00	ND	
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	2.20	ND	
Dichloromethane	ND	ND	6.00	ND	3.00	ND	ND	
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	
Ethylbenzene	2.00	32.00	1,200.00	3.40	19.00	7.40	1.20	
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	
4-Methyl-2-Pentanone (MIBK)	ND	ND	ND	ND	ND	ND	ND	
Styrene	ND	ND	ND	0.60	ND	ND	ND	
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	
Tetrachloroethane (PCE)	ND	0.70	ND	0.40	ND	2.20	ND	
Toluene	5.60	20.00	270.00	9.20	29.00	6.80	1.30	
1,1,1-Trichloroethane (TCA)	ND	ND	ND	0.20	ND	ND	ND	
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	
Trichloroethene (TCE)	ND	20.00	1.30	0.26	2.00	1.70	0.70	
Trichlorofluoromethane (F-11)	ND	ND	0.90	0.20	ND	ND	ND	
Trichlorotrifluoroethane (F-113)	ND	ND	ND	ND	ND	ND	ND	
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	
Vinyl Chloride	ND	ND	3.50	ND	86.00	1.10	ND	
Xylenes, Total	21.00	460.00	2,500.00	5.70	590.00	23.00	49.00	

MARLAING ADDITION GAS RELEASE SITE ASSESSMENT (10/30/91 – 11/02/91): VOLATILE ORGANICS

SAMPLE NUMBERS	SG11	SG11 DUP	SG12	SG13	SG14	SG15	SG16	MHG17
UNITS	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
Acetone	ND	ND	ND	ND	32.00	24.00	6.00	ND
Benzene	25,000.00	28,000.00	1.70	160.00	13.00	3.40	1.40	4.00
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methyl Bromide)	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Butadiene	ND	ND	ND	ND	1.90	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	ND	ND	9.40	ND	4.70	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	260.00	260.00	6.60	13.00	1.40	2.60	4.80	2.20
Chloroethane (Ethyl Chloride)	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethylvinyl ether	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	12.0	6.90	3.00	ND
Chloromethane (Methyl Chloride)	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	3.70	ND	0.50	0.90	ND	0.60
1,1-Dichloroethane	ND	ND	ND	22.00	ND	ND	ND	ND
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	3.00
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	0.60
Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	600.00	780.00	0.40	ND	1.00	0.70	0.40	0.50
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone (MIBK)	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	0.70	ND	ND	0.50
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethane (PCE)	ND	ND	ND	ND	0.70	0.30	ND	9.90
Toluene	13,000.00	16,000.00	2.30	20.00	5.80	3.90	1.20	1.60
1,1,1-Trichloroethane (TCA)	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (TCE)	ND	ND	ND	ND	ND	ND	ND	4.60
Trichlorofluoromethane (F-11)	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorotrifluoroethane (F-113)	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND
inyl Chloride	ND	ND	ND	47.00	ND	ND	ND	ND
Xylenes, Total	4,900.00	5,900.00	6.50	60.00	8.70	11.00	17.00	8.20

LAING ADDITION GAS RELEASE SITE ASSESSMENT (10/30/91 – 11/02/91): VOLATILE ORGANICS

PLE NUMBERS	MHG18	SG19	SG20	SG20 DUP	SG21	MHG22
'S	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
	ND	3.00	ND		33.00	ND
	2.90	1.50	200.00		34.00	2.50
ichloromethane	ND	ND	ND		ND	ND
ıethane (Methyl Bromide)	ND	ND	ND		ND	ND
ɔrm	ND	ND	ND		ND	ND
ıdiene	ND	ND	ND		ND	ND
one (MEK)	ND	ND	ND		ND	ND
Disulfide	ND	ND	28.00		44.00	ND
etrachloride	ND	ND	ND		ND	ND
nzene	0.80	0.68	24.00		13.00	1.70
hane (Ethyl Chloride)	ND	ND	1.10		ND	ND
ethylvinyl ether	ND	ND	ND		ND	ND
rm	ND	ND	ND		ND	ND
ethane (Methyl Chloride)	ND	ND	ND		ND	ND
chloromethane	ND	ND	ND		ND	ND
omoethane (EDB)	ND	ND	ND		ND	ND
lorobenzene	ND	ND	0.50		1.20	ND
lorobenzene	ND	ND	0.80		ND	ND
lorobenzene	ND	ND	6.70		10.00	1.00
loroethane	ND	ND	ND		ND	ND
loroethane (EDC)	ND	ND	ND		ND	ND
loroethene	ND	ND	ND		ND	ND
Dichloroethene	ND	ND	3.70		1.50	ND
-Dichloroethene	ND	ND	ND		ND	ND
nethane	ND	ND	ND		ND	ND
loropropane	ND	ND	ND		ND	ND
Dichloropropene	ND	ND	ND		ND	ND
-Dichloropropene	ND	ND	ND		ND	ND
ene	0.40	0.20	38.00		16.00	5.30
ne	ND	ND	ND		ND	ND
-2-Pentanone (MIBK)	ND	ND	ND		ND	ND
	ND	ND	ND		3.00	0.90
etrachloroethane	ND	ND	ND		ND	ND
roethane (PCE)	0.70	0.50	ND		ND	1.60
	1.20	0.70	14.00		13.00	4.60
chloroethane (TCA)	ND	0.50	2.50		ND	0.60
chloroethane	ND	ND	ND		ND	ND
thene (TCE)	0.70	1.40	ND		0.40	1.40
luoromethane (F-11)	ND	16.00	ND		ND	ND
rifluoroethane (F-113)	ND	ND	ND		ND	ND
tate	ND	ND	ND		ND	ND
nide	ND	ND	1.80		ND	ND
Total	3.80	2.70	330.00		340.00	40.00

MARLAING ADDITION GAS RELEASE SITE ASSESSMENT (10/30/91 – 11/02/91): LOW BOILING COMPOUNDS

SAMPLE NUMBERS	SG1	SG2	SG3	SG4	SG5	SG7	SG9	SG10
UNITS	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
Methane (C1H4)	280,000,000.00	440,000,000.00	540,000,000.00	3,100,000.00	510,000,000.00	74,000,000.00	1,900,000.00	320,000.00
Ethane (C2H6)	ND	ND	ND	ND	ND	170,000.00	ND	ND
Propane (C3H8)	ND	ND	ND	ND	ND	ND	ND	ND
Butenes (C4H8)	ND	ND	ND	ND	430.00	ND	ND	ND
Butanes (C4H10)	190.00	ND	660.00	10.00	320.00	1,300.00	ND	80.00
Hydrocarbon (C5H10)	ND	100.00	ND	ND	ND	ND	ND	ND
Pentanes (C5H12)	110.00	ND	290.00	8.00	260.00	1,200.00	ND	ND
Hydrocarbon (C6H12)	ND	ND	ND	ND	ND	190.00	ND	ND
Hexanes (C6H14)	60.00	80.00	ND	ND	ND	1,400.00	ND	ND
Cyclohydrocarbon (C7H10)	ND	ND	ND	30.00	ND	ND	ND	ND
Hydrocarbon (C7H14)	80.00	ND	490.00	ND	200.00	660.00	ND	ND
Heptanes (C7H16)	180.00	420.00	1,700.00	ND	640.00	990.00	ND	ND
Aromatic Hydrocarbons (C8H10)	ND	ND	ND	ND	ND	ND	ND	ND
Hydrocarbon (C8H16)	40.00	600.00	1,700.00	ND	220.00	1,500.00	ND	ND
Octanes (C8H18)	230.00	920.00	2,900.00	ND	590.00	520.00	7.00	40.00
Aromatic Hydrocarbon (C9H12)	80.00	90.00	ND	ND	660.00	90.00	ND	330.00
Hydrocarbon (C9H16)	160.00	ND	ND	ND	ND	ND	ND	ND
Hydrocarbon (C9H18)	350.00	590.00	1,300.00	ND	1,300.00	230.00	10.00	90.00
Nonanes (C9H20)	760.00	1,200.00	2,500.00	20.00	2,900.00	750.00	20.00	280.00
Hydrocarbons (C10H14)	ND	290.00	ND	30.00	ND	ND	ND	ND
Hydrocarbons (C10H16)	ND	ND	ND	20.00	ND	ND	20.00	ND
Hydrocarbons (C10H18)	160.00	110.00	330.00	60.00	500.00	ND	30.00	ND
Hydrocarbons (C10H20)	610.00	1,100.00	2,400.00	ND	2,100.00	530.00	90.00	440.00
Decanes (C10H22)	650.00	1,200.00	150.00	ND	1,900.00	60.00	50.00	800.00
Hydrocarbon (C11H20)	220.00	ND	820.00	ND	160.00	ND	ND	ND
Hydrocarbons (C11H22)	230.00	390.00	310.00	7.00	420.00	50.00	9.00	70.00
Hydrocarbons (C11H24)	ND	ND	ND	ND	ND	ND	40.00	ND
Undecanes (C11H24)	600.00	ND	470.00	3.00	640.00	70.00	ND	890.00
Hydrocarbons (C12H24)	ND	240.00	ND	ND	ND	30.00	40.00	ND
Dodecanes (C12H26)	ND	ND	ND	ND	ND	ND	8.00	ND
Hydrocarbons (C13H28)	ND	ND	ND	ND	240.00	ND	ND	ND
Freon 12 (CCl2F2)	ND	ND	ND	ND	140.00	ND	ND	ND
Freon 22 (CHClF2)	ND	ND	ND	ND	210.00	ND	ND	ND

NG ADDITION GAS RELEASE SITE ASSESSMENT (10/30/91 – 11/02/91): LOW BOILING COMPOUNDS

E NUMBERS	SG11	SG11 DUP	SG12	SG13	SG14	SG15	SG16	MHG17
	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
H4)	950,000,000.00		270,000.00	280,000,000.00	180,000.00	2,700,000.00	ND	48,000,000.00
6)	28,000,000.00		ND	2,200,000.00	ND	ND	ND	85,000.00
H8)	5,100,000.00		ND	200,000.00	ND	ND	ND	18,000.00
I8)	ND		ND	ND	ND	ND	ND	ND
I10)	1,400,000.00		ND	56,000.00	ND	70.00	ND	390.00
(C5H10)	ND		ND	2,800.00	ND	ND	ND	ND
H12)	570,000.00		ND	6,900.00	ND	50.00	ND	240.00
(C6H12)	41,000.00		ND	ND	ND	ND	ND	100.00
I14)	110,000.00		ND	9,800.00	ND	ND	ND	150.00
rbon (C7H10)	ND		ND	ND	ND	ND	ND	ND
(C7H14)	15,000.00		ND	ND	ND	ND	ND	90.00
H16)	25,000.00		ND	6,400.00	ND	ND	ND	20.00
rocarbons (C8H10)	ND		ND	ND	10.00	ND	ND	ND
C8H16)	ND		ND	ND	ND	ND	ND	30.00
I8)	2,100.00		ND	ND	ND	ND	ND	30.00
rocarbon (C9H12)	2,700.00		ND	ND	5.00	ND	6.00	ND
C9H16)	ND		ND	ND	ND	ND	ND	ND
C9H18)	ND		ND	ND	10.00	ND	ND	30.00
20)	2,600.00		ND	1,200.00	10.00	ND	ND	ND
C10H14)	ND		60.00	ND	ND	ND	ND	ND
C10H16)	ND		380.00	ND	ND	ND	ND	ND
C10H18)	ND		30.00	ND	ND	ND	ND	ND
C10H20)	ND		60.00	ND	40.00	20.00	20.00	ND
22)	ND		ND	ND	8.00	8.00	40.00	20.00
C11H20)	ND		ND	ND	ND	ND	ND	ND
C11H22)	ND		140.00	ND	7.00	ND	ND	ND
C11H24)	ND		ND	ND	ND	ND	ND	40.00
H24)	ND		20.00	4,000.00	ND	ND	5.00	20.00
C12H24)	ND		ND	ND	ND	ND	ND	ND
H26)	ND		ND	3,100.00	ND	ND	ND	ND
C13H28)	ND		ND	ND	ND	ND	ND	ND
2)	ND		ND	ND	ND	ND	ND	ND
F2)	ND		ND	ND	ND	ND	ND	ND

APPENDIX C

POLREPS

Sent Email
8/22/91

POLREP #1
MARLAING ADDITION GAS RELEASE
FIRST STREET NORTH
SAINT ALBANS, KANAWHA COUNTY, WV 25177
ATTN: CHARLIE KLEEMAN, GREGG CRYSTALL, STEPHEN LUFTIG

I. SITUATION (8/21/91, 1800 HRS)

A. THE WHEELING EPA OFFICE RECEIVED A CALL FROM TOM BLAKE, WVDNR DEPARTMENT OF HAZARDOUS WASTE AND RON GREGORY, GENERAL MANAGER OF SAINT ALBANS PUBLIC SERVICE DISTRICT AT 1400 HOURS 8/20/91. THEY REPORTED THAT SOME TYPE OF GAS WAS ENTERING A NEW SEWER SYSTEM IN AN AREA THAT IS ONE BLOCK LONG ALONG TWO MANHOLES AND THAT THE SOURCE IS UNKNOWN. THE PROBLEM WAS IDENTIFIED AROUND APRIL WHEN A GARAGE OWNED BY RICHARD SANSON BLEW UP FOR SOME UNKNOWN REASON. AT THE TIME IT WAS BELIEVED TO BE CAUSED A NATURAL GAS LEAK FROM THE NEIGHBORHOOD PIPELINES. SINCE APRIL, MOUNTAINEER GAS HAS REPAIRED OVER 100 LEAKS IDENTIFIED IN THE AREA AND NOW STATE THAT THE PROBLEM OF AN EXPLOSIVE GAS IN THE NEW SEWER SYSTEM IS NOT A RESULT OF SUPPLY LINE IN THE AREA. UNDER THE DIRECTION OF THE OSC, TAT WAS DIRECTED TO PERFORM AN EMERGENCY ASSESSMENT OF THE PROBLEM AT 1430 HOURS 8/20/91. TAT DEPARTED WHEELING AT 1630 HOURS TO MEET WITH TOM BLAKE AND RON GREGORY ON WEDNESDAY MORNING 8/21/91 AT 0830 HOURS.

B. WEATHER: MOSTLY SUNNY, WINDS 5 TO 10 MPH, TEMPERATURES IN THE MID 70'S.

C. PERSONNEL ON-SCENE: TAT-3, WVDNR-3, SAINT ALBANS-1, SEWER LINE PROJECT-2, CONCERNED CITIZEN-1, AND LEGAL INVESTIGATOR-1.

II. ACTIONS TAKEN

A. TAT MET WITH TOM BLAKE OF WVDNR DEPARTMENT OF HAZARDOUS WASTE AT 0830 HOURS, 8/21/91 AND DISCUSSED THE PROBLEMS AT THE SITE. TOM BLAKE INFORMED TAT THAT THE PROBLEM WAS LOCATED IN TWO MANHOLES OF A NEWLY INSTALLED SEWER SYSTEM IN THE MARLAING ADDITION OF SAINT ALBANS.

B. AT 0920 HOURS, 8/21/91, TAT AND WVDNR MET WITH RON GREGORY, GENERAL MANAGER OF THE SAINT ALBANS PUBLIC SERVICE DISTRICT. MR. GREGORY INFORMED TAT THAT NOBODY HAS BEEN CONNECTED TO THE SEWER SYSTEM IN THE MARLAING ADDITION AND THAT THE TWO MANHOLES IN QUESTION, HAVE BEEN ISOLATED FROM THE REST OF THE SYSTEM. AFTER MOUNTAINEER GAS REPORTED HAVING REPAIRED ALL THE LEAKS, THE SEWER SYSTEM WAS PURGED AND THE EXPLOSIVES VAPORS HAVE RETURNED. IT WAS NOW BELIEVED THAT THE PROBLEM WAS COMING FROM ADDITIONAL GAS LEAKS OR POSSIBLY FROM PB&S CHEMICAL WHICH IS ADJACENT TO THE SITE. MR. GREGORY SAID THAT ANALYTICAL RESULTS SHOWED THAT THE EXPLOSIVE GAS WAS OF THE SAME CONSTITUENTS OF NATURAL GAS, BUT A LATER SAMPLE SHOWS SOMETHING ELSE. AT 0945 HOURS, TAT, WVDNR BLAKE, AND MR. GREGORY TRAVELED TO THE SITE.

C. UPON ARRIVAL AT THE SITE 1010 HOURS, 8/21/91, TAT, WVDNR BLAKE, AND MR. GREGORY MET WITH GREG BELCHER OF CHAPMAN TECHNICAL GROUP, ALBERT MORTOR OF WVDNR WATER RESOURCES, ROBERT WITHROW OF GREEN VALLEY BRIDGE, RICHARD SANSON WHO'S GARAGE BLEW UP, AND NORMAN HENRY THE INVESTIGATIVE CONSULTANT FOR MR. SANSON'S ATTORNEY. ALL PARTIES OF CONCERN PERFORMED AN ONSITE INSPECTION OF THE MARLAING ADDITION AT THAT TIME, IT WAS NOTED THAT A 670 FOOT SECTION OF THE PIPELINE HAD BEEN INSTALLED IN A SOLID WASTE LANDFILL THAT HAD OPERATED FROM ABOUT 1950 TO 1975 WITH AN APPROXIMATE SIZE OF 10 ACRES. AN ADDITIONAL NATURAL GAS LEAK WAS IDENTIFIED IN A WETLANDS AREA THAT WAS DIRECTLY ABOVE THE MOUNTAINEER GAS SUPPLY LINE FOR THE MARLAING ADDITION.

D. AT 1130 HOURS, TAT STARTED TO PERFORM AIR MONITORING ON 9 MANHOLES OF THE NEW SEWER SYSTEM LOCATED IN THE MARLAING ADDITION. THE TWO MANHOLES PREVIOUSLY IDENTIFIED SHOWED OVA READINGS GREATER THAN 1000 PPM, HNU READINGS OF 6.5 TO 7.5 UNITS, CGI READINGS OF 12 TO 19 PERCENT OXYGEN, AND CGI READINGS OF A RANGE FROM 80 TO GREATER THAN 100 PERCENT OF THE LEL FOR PENTANE.

E. AT 1400 HOURS, ERIC GILLESPIE OF WVDNR HAZARDOUS WASTE ARRIVED ON SITE. TAT UPDATED OSC OF CURRENT FINDINGS AND ONSITE ACTIVITIES.

F. TAT SAMPLED THE TWO POTENTIALLY EXPLOSIVE MANHOLES AT 1430 HOURS, 8/21/91 USING A SUMA CANISTER AND ALSO TOOK WATER SAMPLES FOR VOLATILE ORGANIC ANALYSIS OF FREE STANDING WATER AT THE BOTTOM OF THE MANHOLES.

G. TAT CONTINUED TO PERFORM AIR MONITORING OF AN ADDITIONAL 6 MANHOLES LOCATED ON SITE AT 1610 HOURS, 8/21/91. AN ADDITIONAL MANHOLE WAS IDENTIFIED IN ANOTHER AREA OF THE SYSTEM THAT HAD AN OVA READING OF GREATER THAN 1000 PPM, AN HNU READING OF 4.5 UNITS, A CGI READING OF 19 PERCENT OXYGEN, AND A CGI READING 28 PERCENT OF THE LEL FOR PENTANE.

H. ALL PERSONNEL DEPARTED SITE BY 1730 HOURS AND TAT RETURNED TO WHEELING.

III. FUTURE PLANS

A. OSC AND TAT TO AWAIT ANALYTICAL RESULTS TO DETERMINE WHAT CORRECTIVE ACTIONS WOULD BE NEEDED.

B. OSC TO CONTINUE TO COORDINATE WITH WVDNR.

C. TAT TO SEND 2 SUMA CANISTERS AND 2 WATER SAMPLES FOR VOLATILE ORGANIC ANALYSIS ON 8/22/91 WITH A ONE WEEK TURNAROUND.

_____

JERRY SASSEEN, SR. OSC
U.S. EPA - REGION III
WHEELING, WV

COPY

TO: CHARLIE KLEEMAN (KLEEMAN.CHARLIE)
TO: GREGG CRYSTALL (CRYSTALL.GREGG)
TO: STEPHEN LUFTIG (LUFTIG.STEPHEN)
TO: RRC (RRC)

Subject: MARLAING ADDITION GAS RELEASE. POLREP #2

POLREP #2
MARLAING ADDITION GAS RELEASE
SAINT ALBANS. KANAWHA COUNTY, WV
ATTN: CHARLIE KLEEMAN, GREGG CRYSTALL, STEPHEN LUFTIG

I. SITUATION (9/9/91. 1600 HRS)

A. ANALYTICAL RESULTS WERE RECEIVED 9/2/91 FOR REVIEW. UNDER THE DIRECTION OF THE OSC. TAT REVIEWED THE DATA AND DETERMINED THAT TRACE LEVELS OF VOLATILE ORGANICS WERE PRESENT IN THE EXPLOSIVE GAS SAMPLED. THE TYPE OF ORGANIC COMPOUNDS IDENTIFIED ARE SIMILAR TO TYPES THAT CAN BE FOUND IN A SOLID WASTE LANDFILL.

II. ACTIONS TAKEN

A. OSC DIRECTED TAT TO PERFORM A SOIL GAS SURVEY OF THE MARLAING ADDITION AND UTILIZE THE PHOTOIONIZATION GAS CHROMATOGRAPH TO PERFORM THE ANALYTICAL NEEDED TO IDENTIFY THE SOURCE. TAT IS ALSO TO PURCHASE THE NECESSARY EQUIPMENT TO PERFORM ANALYSI ON LOW BOILING GASES.

B. OSC DIRECTED TAT TO GENERATE A SAMPLING PLAN THAT WILL INCLUDE SAMPLING OF THE LANDFILL GASES, PIPELINE BEDDING GASES, RESIDENTIAL SOIL GASES. SEWER MANHOLE GASES. AND NATURAL GAS.

III. FUTURE PLANS

A. OSC TO CONTINUE TO COORDINATE WITH WVDNR.

B. TAT TO GENERATE A SOIL GAS SAMPLING PLAN AND PERFORM ASSESSMENT AND SAMPLING AS SOON AS POSSIBLE.

C. TAT TO ANALYZE SOIL GAS SAMPLES USING THE PHOTOIONIZATION GAS CHROMATOGRAPH.

JERRY SASEEN. SR. OSC
U.S. EPA - REGION III
WHEELING, WV

TOTAL P.02

Subject: MARLAING ADDITION GAS RELEASE, POLREP #3

POLREP #3
MARLAING ADDITION GAS RELEASE
SAINT ALBANS, KANAWHA COUNTY, WV
ATTN: CHARLIE KLEEMAN, GREGG CRYSTALL, STEPHEN LUFTIG

I. SITUATION (THURSDAY-10/17/91, FRIDAY-10/18/91, TUESDAY-10/22/91, 1600 HRS)

A. UNDER THE DIRECTION OF THE OSC, TAT WAS DIRECTED TO SURVEY GRID OF THE SITE, TO BE USED TO ACCURATELY LOCATE SOIL GAS SAMPLING POINTS BOTH IN THE LANDFILL AND THE HOUSING AREA WHERE THE SEWER LINE WAS INSTALLED.

B. WEATHER: 10/17/91 - SUNNY, WINDS 5 TO 10 MPH, TEMPERATURES IN THE UPPER 60'S.
10/18/91 - SUNNY, WINDS 5 TO 10 MPH, TEMPERATURES IN THE UPPER 60'S.

C. PERSONNEL ON-SCENE:
10/17/91 - TAT-2, SAINT ALBANS-1, CHAPMAN ENGINEERING-1.
10/18/91 - TAT-2

D. RON GREGORY CONTACTED OSC, 10/22/91.

II. ACTIONS TAKEN

A. TAT ARRIVED ON SITE AT 0800 HOURS, 10/17/91 TO SURVEY A GRID TO IDENTIFY SOIL GAS SAMPLING LOCATIONS TO BE PERFORM THROUGHOUT THE SITE.

B. RON GREGORY OF THE GREATER SAINT ALBANS PUBLIC SERVICE DISTRICT ARRIVED ONSITE AT 0900 HOURS, 10/17/91 TO PROVIDE ANY ASSISTANCE. TAT REQUESTED SEWER LINE PROFILE MAPS SO THAT THE SEWER LINE DEPTHS CAN ACCURATELY BE DETERMINED. MR. GREGORY CONTACTED GREG BELCHER OF CHAPMAN ENGINEERING TO OBTAIN THE DATA THAT TAT REQUESTED. TAT WAS INFORMED THAT THE SEWER PROJECT IS 55% FUNDED ($6,000,000) BY THE CLEAN WATER ACT.

C. AT 1000 HOURS, 10/17/91, GREG BELCHER ARRIVED ON SITE TO PROVIDE TAT WITH THE REQUESTED INFORMATION. HE INFORMED TAT THAT THE ONLY INFORMATION AVAILABLE WAS PRECONSTRUCTION DESIGN BLUEPRINTS AND NOT THE POST CONSTRUCTION BLUEPRINTS. HE STATED THAT THE DRAWINGS ARE CURRENTLY BEING DRAW UP AND PRIORITY WILL BE GIVEN TO THE SECTIONS PERTAINING TO THE MARLAING ADDITION.

D. MR. GREGORY AND GREG BELCHER DEPARTED SITE AT 1100 HOURS, 10/17/91. TAT CONTINUED SURVEYING OF GRID.

E. AT 1730 HOURS, 10/17/91, TAT COMPLETED GRID LAYOUT AND DEPARTED SITE FOR THE DAY.

F. TAT ARRIVED ON SITE AT 0800 HOURS, 10/18/91 AND PERFORMED SAMPLING ON MANHOLES F16-1 & F16-2. AIR MONITORING ON THE MANHOLES CONTINUE TO SHOW OXYGEN LEVELS AT 15% AND COMBUSTIBLE GAS LEVELS OF GREATER THEN 100% OF THE LEL.

G. AT 0900 HOURS, 10/18/91, TAT INSPECTED MANHOLE F16-3 AND DISCOVERED THAT THE ORGANIC BASED SEALANT USED ON THE CONCRETE JOINTS OF THE MANHOLE SECTIONS WAS FLOWING AS A LIQUID ON THE INSIDE WALL. IT APPEARS THAT THE ORGANIC VAPORS FROM THE MANHOLE ARE DISSOLVING THE SEALANT.

H. TAT DEPARTED SAINT ALBANS PUBLIC SERVICE DISTRICT AT 1100 HOURS, 10/18/91.

I. ON 10/22/91, OSC INFORMED RON GREGORY THAT IT IS RESPONSIBILITY OF THE PSD TO FULFILL THE OBLIGATION OF AN INVESTIGATION TO THE PROBLEM, IN EVENT THAT THE RESPONSIBLE PARTIES CANNOT FULFILL THIS REQUIREMENT THE EPA MAY SEEK COMPLETE COST RECOUPMENT FOR ANY EXPENDITURES REQUIRED TO MITIGATE THE THREAT.

III. FUTURE PLANS

A. OSC TO EXPLORE THE CLEAN WATER ACT FUNDING OF THE PROJECT AND DETERMINE IF EPA WAS AWARE OF THE INSTALLATION OF THE SEWER LINE IN THE LANDFILL.

B. OSC TO UPDATE WVDNR AS TO THE CURRENT SITE STATUS

JERRY SASEEN, SR. OSC
U.S. EPA - REGION III
WHEELING, WV

F. AT 1345 HOURS, 10/23/91, OSC AND EOSC HELD A PREPUBLIC MEETING WITH GSAPSD GENERAL MANAGER (GREGORY). EOSC LAPSLY INFORMED RON GREGORY OF GSAPSD'S STATUS AS A PRP IF THERE IS A THREAT DETERMINED AT THE SITE. EOSC LAPSLEY INTERVIEWED MR. GREGORY TO DETERMINE ADDITIONAL PRP'S.

G. AT 1410 HOURS, 10/23/91, A PUBLIC MEETING WAS HELD FOR ALL INTERESTED PARTIES. GSAPSD GENERAL MANAGER GREGORY UPDATED THE PUBLIC ON BACKGROUND AND CURRENT SITE STATUS. OSC INFORMED THE PUBLIC OF EPA'S PRIMARY FUNCTION WHICH WILL BE TO GATHER INFORMATION TO EXPEDITE ACTIONS AS QUICKLY AS POSSIBLE. EOSC STATED CERCLA REGULATIONS FOR REMOVAL ACTIONS AND RESPONSIBLE PARTY(IES) ROLES IF THIS FALLS UNDER SUPERFUND.

H. AT 1430 HOURS, 10/23/91, A QUESTION AND ANSWER SESSION WAS HELD WITH THE MEETING ADJOURNING AT 1440 HOURS WITH ALL PARTIES THEN TRAVELING TO THE SITE.

I. AT 1455 HOURS, 10/23/91, ALL INTERESTED PARTIES ARRIVED AT SITE. TAT CALIBRATED AIR MONITORING INSTRUMENTS.

J. AT 1500 HOURS, 10/23/91 TAT CONDUCTED AIR MONITORING OF THE MARLAING ADDITION SEWER SYSTEM MANHOLES. READINGS ON THE CGI INDICATED 18% OXYGEN AND > 100% LEL AND READINGS ON THE OVA WERE > 1000 PPM. NO HNU READINGS WERE DETECTED. MEDIA CREWS WERE PRESENT DURING AIR MONITORING AND OBTAINED FILM FOOTAGE OF THE EVENT.

K. OSC UPDATED CONCERNED CITIZENS OF SITE STATUS AT 1530 HOURS, 10/23/91.

L. MAYOR ARRIVED ON SITE AT 1600 HOURS, 10/23/91, AND WAS UPDATED BY OSC AS TO THE ROLE OF THE VARIOUS AGENCIES INVOLVED IN THE SITE.

M. ALL INTERESTED PARTIES DEPARTED SITE AT 1700 HOURS, 10/23/91.

N. AT 1745 HOURS, 10/23/91, OSC CONTACTED SECTION CHIEF KLEEMAN AND INFORMED HIM OF SITE ACTIVITIES FOR THE DAY.

O. OSC AND TAT DISCUSSED SAMPLING ASSESSMENT REQUIREMENTS AT 1900 HOURS, 10/23/91.

III. FUTURE PLANS

A. OSC TO CONTACT EPA GRANTS.

B. EOSC TO UPDATE SECTION CHIEF WOLPER ON SITE STATUS.

C. TAT TO DEVELOP SAMPLING STRATEGY FOR THE SITE AND INITIATE DURING THE WEEK OF 10/28/91.

D. OSC TO COORDINATE ALL INFORMATION WITH STATE AND LOCAL AGENCIES.

JERRY SASEEN, SR. OSC
U.S. EPA - REGION III
WHEELING, WV

GLEN LAPSLEY, EOSC
U.S. EPA - REGION III
PHILADELPHIA, PA

istribution:

): KAREN WOLPER (WOLPER.KAREN)
): CHARLIE KLEEMAN (KLEEMAN.CHARLIE)
): GREGG CRYSTALL (CRYSTALL.GREGG)
): RRC (RRC)
): STEPHEN LUFTIG (LUFTIG.STEPHEN)
): REG03 TAT.VW (REG03.TAT.WV)

Subject: MARLAING ADDITION POLREP #6

POLREP #6
MARLAING ADDITION GAS RELEASE
FIRST STREET NORTH
SAINT ALBANS, KANAWHA COUNTY, WV
ATTN: CHARLIE KLEEMAN, GREGG CRYSTALL, STEPHEN LUFTIG

I. SITUATION (WEDNESDAY, 10/30/91, THRU SATURDAY, 11/02/91, 1600 HOURS)

A. UNDER THE DIRECTION OF THE OSC, TAT PERFORMED A SOIL GAS SAMPLING ASSESSMENT FOR VOLATILE ORGANICS WHICH INCLUDED LOW BOILING GASES.

B. PERSONNEL ON SCENE:

10/30/91 TAT-4, WVDNR-2, SAINT ALBANS-1, GSAPSD-1, CONCERNED CITIZENS-6

10/31/91 EPA-1, TAT-7, WVDNR-1, CONGRESS-1, CONCERNED CITIZENS-4

11/01/91 EPA-1, TAT-6, WVDNR-1, CONGRESS-1, CONCERNED CITIZENS-5

11/02/91 TAT-3

C. WEATHER:

10/30/91 POLLUTION INDEX EXTREMELY HIGH, VISIBILITY POOR, TEMPERATURES IN THE LOW 70'S

10/31/91 POLLUTION INDEX EXTREMELY HIGH, VISIBILITY POOR, TEMPERATURES IN THE LOW 70'S

11/01/91 POLLUTION INDEX EXTREMELY HIGH, VISIBILITY POOR, TEMPERATURES IN THE LOW 70'S

11/02/91 CLOUDY, TEMPERATURES IN THE UPPER 40'S

II. ACTIONS TAKEN

A. TAT ARRIVED ON SITE AT 1300 HOURS, 10/30/91, TO PERFORM AIR MONITORING OF ALL MANHOLES LOCATED WITHIN THE IMMEDIATE AREA OF THE MARLAING ADDITION. ALSO PRESENT WAS THE MAYOR OF SAINT ALBANS (BASSITT), GREATER SAINT ALBANS PUBLIC SERVICE DISTRICT (GREGORY & GRUBBS), WEST VIRGINIA DEPARTMENT OF NATURAL RESOURCES (MIKE JOHNSON & ALBERT MORTON), AND CONCERNED CITIZENS.

B. AT 1530 HOURS, 10/30/91, TAT PERFORMED MONITORING IN 13 OF 16 MANHOLES AND FOUND 3 THAT NEEDED TO BE SAMPLED. THE FOLLOWING RESULTS FOR THE 3 MANHOLES WERE AS FOLLOWS:

MANHOLE F1-4 OVA-GREATER THAN 1000 PPM, O2-15%, LEL-15%
MANHOLE F16-1 OVA-GREATER THAN 1000 PPM, O2-13%, LEL-GREATER THAN 100%
MANHOLE F16-2 OVA-GREATER THAN 1000 PPM, O2-11%, LEL-GREATER THAN 100%

ALL PERSONNEL DEPARTED SITE.

C. TAT ARRIVED ON SITE AT 0700 HOURS, 10/31/91, SURVEYED THE LOCATION AND DEPTH OF ALL SAMPLING LOCATIONS AND COMPLETED THE AIR MONITORING OF THE 3 REMAINING MANHOLES.

D. AT 0830 HOURS, 10/31/91, EPA OPA (GAUGHAN) ON SITE TO TALK TO CONCERNED CITIZENS.

E. AT 0900 HOURS, 10/31/91, WEST VIRGINIA CONGRESSIONAL REPRESENTATIVE (LUCILLE MORGAN) ARRIVED ON SITE TO DETERMINE ASSESSMENT PROGRESS.

F. LUCILLE MORGAN DEPARTED SITE AT 0930 HOURS, 10/31/91.

G. TAT STARTED SAMPLING SOIL GAS AT 1300 HOURS, 10/31/91.

H. AT 1800 HOURS, 10/31/91, TAT COMPLETED SOIL GAS SAMPLING FOR 5 OF THE 20 SAMPLING LOCATIONS USING SUMA CANISTERS. ALL PERSONNEL DEPARTED SITE.

I. TAT ARRIVED ON SITE AT 0700 HOURS, 11/01/91, TO CONTINUE PERFORMING SAMPLING OF THE 15 REMAINING SAMPLES.

J. AT 0900 HOURS, 11/01/91, CONGRESSIONAL REPRESENTATIVE (MORGAN) ARRIVED ON SITE TO DETERMINE ASSESSMENT PROGRESS.

K. CONGRESSIONAL REPRESENTATIVE (MORGAN) DEPARTED SITE AT 0930 HOURS, 11/01/91.

L. AT 1100 HOURS, 11/01/91, EPA OPA (GAUGHAN) ON SITE TO OBTAIN AN UPDATE OF THE ASSESSMENT PROGRESS.

M. EPA OPA (GAUGHAN) DEPARTED SITE AT 1200 HOURS, 11/01/91.

N. AT 1900 HOURS, 11/01/91, TAT COMPLETED ALL SOIL GAS SAMPLING WITH A TOTAL OF 11 SAMPLES TAKEN OF THE REMAINING 15 SAMPLES. ALL PERSONNEL DEPARTED SITE.

O. TAT ARRIVED ON SITE AT 0700 HOURS, 11/02/91, TO COMPLETE SAMPLING OF THE REMAINING 4 SAMPLES.

P. AT 0900 HOURS, 11/02/91, A TOTAL OF 4 GAS SAMPLES WERE TAKEN, 3 OF THE MANHOLE GAS AND 1 OF THE NATURAL GAS SUPPLY FOR THE AREA. TAT COMPLETED ALL SAMPLING FOR THE MARLAING ADDITION ASSESSMENT. ALL PERSONNEL DEPARTED SITE.

III. FUTURE PLANS

A. TAT TO SHIP 20 SUMA CANISTERS TO COAST TO COAST ANALYTICAL SERVICES FOR ANALYSIS.

B. UPON RECEIPT OF THE ANALYTICAL, EPA AND TAT TO INTERPRET THE RESULTS.

C. OSC TO COORDINATE ALL INFORMATION WITH STATE AND LOCAL AGENCIES.

JERRY SASEEN, SR. OSC
U.S. EPA - REGION III
WHEELING, WV

GLEN LAPSLEY, EOSC
U.S. EPA - REGION III
PHILADELPHIA, PA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
EPA REGION III
EMERGENCY RESPONSE TEAM

FACSIMILE TRANSMITION

TO: Tom Blake
WVDNR

TELEPHONE: _____

FROM: B. Wilmoth
EPA

LOCATION: _____

TELEPHONE: _____

COMMENTS: Pat Gaughan said that Charlie Ueeman turned the EPA Superfund assessment over to Bryan Trubey, of EPA III Grants Programs 215-597-9597 whose office I believe issued a press release within last days or two. Please call that office for a copy and any information

DATE: 12-31-91

NO. OF PAGES, 2 INCLUDING COVER PAGE

SENT BY:ROY F WESTON MP R ;12-31-91 9:37AM ; 3042430807→ 3042338073;# 1

-CLL - Jm - USE
12/16/91

POLREP #7
MARLAING ADDITION GAS RELEASE
FIRST STREET NORTH
SAINT ALBANS, KANAWHA COUNTY, WV
ATTN: CHARLIE KLEEMAN, GREGG CRYSTALL, STEPHEN LUFTIG

I. SITUATION (MONDAY, 12/16/91, 1300 HOURS)
   A. ANALYTICAL RESULTS WERE RECEIVED ON 11/12/91 FOR QA/QC REVIEW AND INTERPRETATION.
   B. AT 1100 HOURS, 12/16/91, WESTERN RESPONSE SECTION CHIEF, OSC, EPA CONSTRUCTION GRANTS, OPA, AND TAT HELD A TELE-CONFERENCE CONCERNING THE ANALYTICAL RESULTS FROM THE PREASSESSMENT OF THE MARLAING ADDITION GAS RELEASE.

II. ACTIONS TAKEN
   A. AT 1100 HOURS, 12/16/91, CHARLIE KLEEMAN, OSC SASEEN, EPA CONSTRUCTION GRANTS (TRULEAR), OPA (GAUHGAN), AND TAT DISCUSSED THE CURRENT SITUATION AT THE SITE AND ANALYTICAL RESULTS FROM THE 10/30/91 PREASSESSMENT. IT WAS DETERMINED THAT OSC SASEEN WILL SEND A REPORT OF ANALYTICAL RESULTS AND FINDINGS TO EPA CONSTRUCTION GRANTS. IT WAS ALSO DETERMINED THAT DECISIONS AND ACTIONS TAKEN WILL BE PERFORMED BY EPA CONSTRUCTION GRANTS INCLUDING COORDINATION WITH WEST VIRGINIA GRANTS.

III. FUTURE PLANS
   A. OSC TO PROVIDE EPA CONSTRUCTION GRANTS WITH THE FINAL REPORT AND FINDINGS WITH STATE AND LOCAL AGENCIES.
   B. EPA CONSTRUCTION GRANTS TO TAKE LEAD ROLE AND PROVIDE CONGRESSMAN WISE WITH UPDATE INFORMATION ON SITE STATUS.

JERRY SASEEN, SR. OSC
U.S. EPA - REGION III
WHEELING, WV

GLEN LAPSLEY, EOSC
U.S. EPA - REGION III
PHILADELPHIA, PA

Tom - I believe that Grants Program's EPA can send you a summary of the analytical data.

Clearwood Drum Site
TDD - 9110-18
PCS - 1926

BEN

POLREP #8
MARLAING ADDITION GAS RELEASE
FIRST STREET NORTH
SAINT ALBANS, KANAWHA COUNTY, WV
ATTN: CHARLIE KLEEMAN, GREGG CRYSTALL, DEBBIE DIETRICH

I. SITUATION (WEDNESDAY, 6/10/92, 1900 HOURS)
   A. UNDER THE DIRECTION OF THE OSC, TAT MET WITH WEST VIRGINIA GAS PIPELINE SAFETY/PUBLIC SERVICE COMMISSION AND REPRESENTATIVES OF MOUNTAINEER GAS TO DISCUSS CURRENT PROBLEMS AT THE SITE. AFTER REPAIRING WHAT WAS BELIEVED TO BE THE PROBLEM CAUSING GAS IN THE MANHOLES, THE GAS RETURNED THREE WEEKS AGO IN MANHOLE F16-2.
   B. WEATHER: SUNNY, WINDS 5 TO 10 MPH, TEMPERATURES IN THE LOW 80'S.
   C. PERSONNEL ON-SCENE: TAT-1, WV GPS/PSC-5, GSA/PSD-3, MOUNTAINEER GAS-4, CONCERNED CITIZENS-4

II. ACTIONS TAKEN
   A. AT 0830 HOURS, 6/10/92 TAT ARRIVED ON SITE TO MEET WITH REPRESENTATIVES FROM WEST VIRGINIA GAS PIPELINE SAFETY/PUBLIC SERVICE COMMISSION, GREATER SAINT ALBANS PUBLIC SERVICE DISTRICT, AND MOUNTAINEER GAS.
   B. ALL PERSONNEL ARRIVED ONSITE AT 0900 HOURS, 6/10/92 TO PERFORM AN ONSITE ASSESSMENT OF THE CURRENT PROBLEMS AND CONCERNS. WV GPS/PSC REMOVED THE MANHOLE COVERS ON MANHOLES F16-1 THRU F16-5, F17-1, AND F18-1 TO SAMPLE FOR GAS USING AIR MONITORING EQUIPMENT. ONLY ONE MANHOLE (F16-2) IN THE MARLAING ADDITION SEWER SYSTEM HAD DETECTABLE LEVELS, IT WAS DETERMINED THAT A CONCENTRATION OF 5% FLAMMABLE GAS WAS PRESENT IN THE MANHOLE. AFTER FURTHER SAMPLING, IT WAS DETERMINED THAT THE GAS IN THE SOIL WITHIN THE IMMEDIATE AREA SURROUNDING F16-2 COULD BE MEASURED IN UNDERGROUND CONTAINMENT AREAS FOR WATER METERS AND GAS SHUTOFF VALVES. ALL POSSIBLE NATURAL GAS SOURCES WERE IDENTIFIED AS NATURAL ORGANIC DECOMPOSITION, TEXACO HIGH PRESSURE PIPELINE, MOUNTAINEER GAS HIGH PRESSURE PIPELINE, AND MOUNTAINEER GAS RESIDENTIAL SUPPLY. WV GPS/PSC REQUESTED THAT LEAK TEST BE PERFORMED ON ALL GAS SUPPLIES WITHIN THE IMMEDIATE AREA. UPON ACQUIRING A ANALYTICAL CONTRACTOR, WV GPS/PSC WILL HAVE ALL NATURAL GAS SOURCES SAMPLED TO IDENTIFY THE SOURCE OF GAS ENTERING THE SEWER SYSTEM. IT WAS DETERMINED THAT THE STUDY WILL TAKE 2 TO 4 WEEKS.
   C. ALL PERSONNEL DEPARTED SITE AT 1130 HOURS.
   D. TAT UPDATED OSC AT 1330 HOURS ON SITE ACTIVITIES AND STATUS OF THE PROBLEM.

II. FUTURE PLANS
   A. UNDER THE DIRECTION OF THE OSC, TAT WILL BE PRESENT AT THE SITE UPON THE REQUEST OF WV GPS/PSC FOR TECHNICAL ASSISTANCE ON PREVIOUS EPA ASSESSMENT ACTIVITIES AND SAMPLING THE SOURCES FOR RP DETERMINATION.
   B. OSC AND TAT TO CONTINUE DOCUMENTATION OF SITE ACTIVITY.

_____
ARJORIE EASTON, OSC

U.S. EPA - REGION III
WHEELING, WV

POLREP #9
MARLAING ADDITION GAS RELEASE
FIRST STREET NORTH
SAINT ALBANS, KANAWHA COUNTY, WV
ATTN: CHARLIE KLEEMAN, GREGG CRYSTALL, DEBBIE DIETRICH

I. SITUATION (THURSDAY, 6/18/92, 1900 HOURS)

A. ON WEDNESDAY 6/17/92, TAT WAS TASKED TO OBSERVE THE SAMPLING OF THE FLAMMABLE GAS IN THE MANHOLE F16-2 AND THREE POTENTIAL SOURCES: 1) TENNESSEE PIPELINE GAS, 2) MOUNTAINEER GAS PIPELINE, AND 3) LANDFILL GAS BY A CONTRACTOR LAB, ISOTECH, FOR THE WV PUBLIC SERVICE COMMISSION ON 6/18/92.

B. PERSONNEL ON-SCENE: TAT-1, WVPSC-3, ISOTECH LAB-1, ST. ALBANS PSD-2, MOUNTAINEER GAS-2, CITIZENS-1.

C. WEATHER ON-SCENE: SKIES OVERCAST, LIGHT DRIZZLE, TEMPS IN THE MID 70'S.

II. ACTIONS TAKEN

A. AT 1120 HOURS, TAT ARRIVED ON-SCENE AND MET WITH ST. ALBANS PSD REPRESENTATIVES. THEY TESTED MANHOLE F16-2 AND OBTAINED READINGS OF 5% GAS. ST. ALBANS PSD STAKED AND NUMBERED EACH MANHOLE.

B. WVPSC AND CONTRACTOR LAB REPRESENTATIVE SAMPLED THE TENNESSEE PIPELINE GAS FROM A HIGH PRESSURE VENT NEXT TO ROUTE 35 WEST OF THE SITE. THE SAMPLE WAS TAKEN IN A STEEL LECTURE GAS CYLINDER.

C. THE SAMPLING CREW COLLECTED THE LANDFILL GAS SAMPLE. THIS COMPOSITE SAMPLE WAS TAKEN FROM APPROXIMATELY 8-12 HOLES PUNCHED APPROXIMATELY 60 FEET NORTH OF MANHOLE F16-3. A METER MEASURING % GAS WAS CONNECTED IN LINE WITH THE SAMPLE PUMP IN ORDER TO ENSURE THAT ENOUGH VOLUME OF LANDFILL GAS WAS COLLECTED FOR THE ANALYTICAL TESTS TO BE PERFORMED. A 10 LITER BAG SAMPLE WAS OBTAINED.

D. THE SAMPLING CREW MOVED TO MANHOLE F16-2 AND BEGAN THE SAMPLING PROCESS. THREE 10 LITER BAGS WERE TAKEN.

E. THE FOURTH AND FINAL SAMPLE WAS TAKEN FROM THE MOUNTAINEER GAS METER APPROXIMATELY 15 FEET FROM MANHOLE F16-2. ACCORDING TO THE MOUNTAINEER GAS REPRESENTATIVES, THEIR MAIN PIPELINE FEEDS THE GAS METER.

F. AT 1435 HOURS, SAMPLING WAS COMPLETED AND ALL PERSONNEL DEPARTED THE SITE.

G. THE SAMPLES WILL UNDERGO THREE TYPES OF ANALYSIS: 1) GAS CHROMATOGRAPH TO IDENTIFY THE MAJOR CONSTITUENTS, 2) STABLE ISOTOPIC ANALYSIS TO IDENTIFY THE SPECIFIC ISOTOPES WITH RATIOS IN THE MANHOLE SAMPLE TO COMPARE WITH THE ISOTOPES WITH RATIOS FROM THE POTENTIAL SOURCES, 3) CARBON 14 DATING USED TO IDENTIFY WHEN THE NATURAL GAS WAS GENERATED. THE THREE ANALYSIS WILL BE USED AS A FINGERPRINT OF THE POTENTIAL SOURCES AND WILL BE COMPARED WITH THE MANHOLE GAS FINGERPRINT. RESULTS ARE EXPECTED IN 3-4 WEEKS AND WILL BE AVAILABLE FROM WVPSC.

III. FUTURE PLANS

A. OSC AND TAT TO CONTINUE DOCUMENTATION OF SITE ACTIVITIES.

MARJORIE EASTON, OSC
U.S. EPA - REGION III
WHEELING, WV

FAX TRANSMISSION

TO: Pam Hayes

Ph #: _____ Mail Code: _____

Re: EPA III Ph #: 215 597 8138 Date: _____

# of Pgs: _____ Confirm: _____ Time: _____

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
EPA
REGION III
EMERGENCY RESPONSE TEAM

APPENDIX D

WVDNR Heritage Trust File Review

STATE OF WEST VIRGINIA
DEPARTMENT OF COMMERCE, LABOR AND ENVIRONMENTAL RESOURCES
DIVISION OF NATURAL RESOURCES
OPERATIONS CENTER
P.O. Box 67
Elkins, West Virginia 26241
Telephone (304)637-0245 - Fax (304)637-0250

CAPERTON
vernor

J. EDWARD HAMRICK III
Director

ANN A. SPANER
Deputy Director

October 16, 1991

Mr. Rusty Joins
Division of Natural Resources
Waste Management Section
1356 Hansford Street
Charleston, WV 25301

Dear Mr. Joins:

We have reviewed your request for rare, threatened and endangered species and wetland information for the Saint Albans Trailer Park CERCLA site in Saint Albans, West Virginia.

We have records for two state rare plant species within a four-mile radius: Slender crabgrass (Digitaria filiformis) and Gyandotte beauty (Synandra hispidula). Also within the four-mile radius are several wetland areas. Most are river slough-backwater areas (Tackett Creek, Gallatin Branch and Scary Creek). A marsh is also located along Gallatin Branch.

There are several state rare species and wetland areas within 15 miles downstream. River slough-backwater areas are located at Armour Creek, Bills Creek, Rock Branch, Gauno Creek, Little Guano Creek, Second Branch, and a few unnamed tributaries to the Kanawha River. About two miles upstream of Winfield is Winfield Swamp. This area contains the following rare species:

Swamp loosestrife	Decodon verticillata
Red-eared slider	Trachemys scripta elegans
Spotted pondweed	Potamogeton pulcher
Large marsh St. John's-wort	Hypericum tubulosum
A sedge	Carex typhina
Columbia water-meal	Wolffia columbiana
Water-meal	Wolffia papulifera

One other species within 15 miles downstream is the Map turtle (Graptemys geographica).

This response is based on information currently available and should not be considered a total or comprehensive survey of the area under review, and we know of no rare species surveys that have been conducted in the area.

Enclosed please find a STATEMENT OF AGREEMENT and an invoice. The Agreement is a Division formality and should be signed and returned with your remittance.

Thank you for your inquiry and should you have any questions, please feel free to call upon us.

Sincerely,

Barbara Sargent

Barbara Sargent
Data Request Coordinator
Natural Heritage Program
Wildlife Resources Section

BS:jc

Enclosures

APPENDIX E

EPA Memorandium

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION III
Wheeling Office
303 Methodist Bldg. 11th & Chapline Streets
Wheeling, West Virgina 26003

MEMORANDUM

TO: Brian Trulear, U.S. EPA Region III
Construction Grants Section

FROM: Jerry Saseen, Senior OSC, U.S. EPA Region III
Western Response Section

SUBJECT: Emergency Assessment
Marlaing Addition Gas Release Site
Saint Albans, Kanawha County, West Virginia

DATE: December 19, 1991

BACKGROUND

The Marlaing Addition Gas Release Site, Saint Albans, Kanawha County, West Virginia, involves explosive gas found in manholes F16-1 & F16-2 of a newly installed sewer system located within the Marlaing Subdivision. A problem was identified around April 1991 when a garage owned by Richard Sanson blew up for some unknown reason. At the time it was believed to be caused by natural gas leaks from the neighborhood pipelines. Since April 1991, Mountaineer Gas has repaired over 100 leaks identified in the area. After levels of explosive gas were still found in the sewer system, the supply line to the neighborhood was completely replaced except for the extensions leading from the line to the residences. Mountaineer Gas now states that the problem of the explosive gas in the new sewer system is not a result of the supply line in the area.

TAT performed an emergency assessment of the problem at 0930 hours, August 21, 1991. Ron Gregory, general manager of the Greater Saint Albans Public Service District (GSAPSD) informed TAT that no residences were connected to the sewer system and that the sewer lines connecting the manholes were isolated with plugs, but the gas was still entering the manholes. The GSAPSD also stated that after the manholes had been purged, the gases continued to return. Mr. Gregory said that earlier analytical results showed that the explosive gas was of the same constituents as natural gas, but current GSAPSD samples show the

presence of unknown constituents, indicating another source. TAT noted that a 670-foot section of the pipeline had been installed in a solid waste landfill of approximately 10 acres that was operated between 1950 to 1975. An additional natural gas leak was identified in a wetlands area that was directly above the Mountaineer gas supply line for the Marlaing Addition; this leak was repaired after TAT became involved with the site.

TAT monitored the air at the three manholes and obtained OVA readings greater than 1000 ppm, HNU readings of 6.5 to 7.5 units, CGI readings of 12 to 19 percent oxygen, and CGI readings of a range from 80 to greater than 100 percent of the LEL for pentane. Two air samples that TAT obtained from manholes F16-1 & F16-2 indicated that low levels of volatile organic solvents were present but not in levels that would give a percentage of the LEL in reference to pentane.

On October 23, 1991, EPA and TAT performed a windshield assessment at the Marlaing Addition Gas Release Site and determined that another preliminary assessment needed to be performed at the site. EPA and TAT then attended a public meeting between all concerned parties which included Members of the Greater Saint Albans Public Service District, Attorney's, West Virginia State Agencies, Contractor's, the Gas Company, other Local Agencies, and News Media. The preliminary assessment was scheduled for October 30, 1991.

ASSESSMENT ACTIVITIES

TAT arrived on site at 1300 hours, October 30, 1991, and performed air monitoring on 13 of the 16 manholes located on site. TAT determined that 3 of the manholes needed to be sampled for gas analysis. TAT departed site at 1530 hours.

At 0700 hours, October 31, 1991, TAT surveyed the location and depth of all sampling locations and completed the air monitoring of the 3 remaining manholes. Soil gas sampling started at 1300 hours. At 1800 hours, TAT departed site after completing 5 of the 20 soil gas samples to be taken on site.

TAT arrived on site at 0700 hours, November 1, 1991, to continue sampling of the 15 remaining samples. At 1900 hours, TAT departed site after performing an additional 11 soil gas samples which brought the total to 16 samples taken.

At 0700 hours, November 2, 1991, TAT performed gas sampling on a natural gas supply source for the area and 3 manholes within the Marlaing Addition Sewer System. TAT demobed from site at 0900 hours after all samples were taken.

The following is a list of all samples taken and their relative locations (see table 1 and attached sampling map):

SAMPLE NUMBER	DATE	TIME IN HOURS	SUMA CANISTER NUMBER	STATION LOCATION
SG1	10/31/91	1600	546	10'N 10'E OF M.H. F16-5
SG2	10/31/91	1647	312	10'N 10'E OF M.H. F16-4
SG3	10/31/91	1706	565	10'N 10'E OF M.H. F16-3
SG4	10/31/91	1532	546	145'E OF M.H. F16-5, LINE
SG5	10/31/91	1618	420	113'E OF M.H. F16-4, LINE
SG7	11/01/91	0800	408	200'S OF M.H. F16-3, LINE
SG9	11/01/91	1755	403	1'E OF M.H. F17-1, LINE
SG10	11/01/91	1607	122	1'S OF M.H. F20-1, LINE
SG11	11/02/91	0845	114	SANSON'S GARAGE, NAT. GAS
SG12	11/01/91	1730	453	267'W OF M.H. F16-1, LINE
SG13	11/01/91	0850	549	10"W OF M.H. F16-1, LINE
SG14	11/01/91	1154	537	1'W OF M.H. F1-5, LINE
SG15	11/01/91	0925	542	10"N OF M.H. F1-3, LINE
SG16	11/01/91	1119	538	SOUTH OF M.H. F1-1, LINE
MHG17	11/02/91	0809	458	M.H. F16-2 GAS
MHG18	11/02/91	0815	548	M.H. F16-1 GAS
SG19	11/01/91	1052	409	NEXT TO LIFT ON F1 LINE
SG20	11/01/91	1650	503	50'N OF M.H. F16-3
SG21	11/01/91	1705	520	100'N OF M.H. F16-3
MHG22	11/02/91	0820	562	M.H. F1-4 GAS

table 1

ANALYTICAL DATA

On November 12, 1991, TAT received the suma gas analytical results (summary included in this report) from the samples taken during the October 31, 1991 thru November 2, 1991, assessment. For complete listing of analytical data, see the attached data summary.

NATURAL GAS: Sample SG11, was taken from a natural gas meter adjacent to Mr. Sanson's garage at the corner of 1st Avenue and Huntington Street. All voa data was above the levels normally found in natural gas but because the volatile organics found are high boiling compounds they would tend to condense and concentrate out of the vapor phase when given appropriate conditions such as a gas meter. A total of 78.5% of the sample collected was a natural gas sample with the remaining 21.5% being atmospheric air, this was caused by the method of collection utilized. Although the sample collected is not a pure representative sample of natural gas, it is the actual constituents that is of value for determination of the problem at the Marlaing Addition. Analytical constituents are listed below (see table 2):

NATURAL GAS SAMPLE CONSTITUENTS	
COMPOUND	CONCENTRATION (ppbv)
LOW BOILING COMPOUNDS	
Methane	750,000,000
Ethane	28,000,000
Propane	5,100,000
Butane	1,400,000
Pentane	370,000
Hexane	110,000
VOLATILE ORGANIC COMPOUNDS	
Benzene	25,000
Chlorobenzene	260
Ethylbenzene	600
Toluene	13,000
Xylenes	4,900

table 2

A primary characteristic of natural gas is that the low boiling compounds (carbons 1-6) have a decrease in concentration as there is an increase in the size of the carbon chain.

LANDFILL GASES: A total of 5 samples were taken in the soil matrix of the old municipal waste landfill adjacent to the Marlaing Addition. Of the 5 samples, only 4 samples (SG1, SG2, SG3, & SG20) showed gas constituents pertaining to gases generated from solid waste. The analytical constituents are listed below (see table 3):

LANDFILL GAS SAMPLE CONSTITUENTS

COMPOUND	SAMPLE CONCENTRATION (ppbv)			
	SG1	SG2	SG3	SG20
LOW BOILING COMPOUND				
Methane	280,000,000.0	440,000,000.0	540,000,000.0	480,000,000.0
Butane	190.0	ND	660.0	150.0
Pentane	110.0	ND	290.0	ND
Hexane	60.0	80.0	ND	790.0
VOLATILE ORGANIC COMPOUNDS				
Acetone	ND	ND	22.0	ND
Benzene	86.0	130.0	250.0	200.0
Carbon disulfide	21.0	ND	650.0	28.0
Chlorobenzene	140.0	13.0	86.0	24.0
Chloroethane	ND	7.6	ND	1.1
1,2-Dichlorobenzene	0.4	2.3	1.4	0.5
1,3-Dichlorobenzene	ND	ND	ND	0.8
1,4-Dichlorobenzene	35.0	27.0	23.0	6.7
1,1-Dichloroethane	ND	2.5	ND	ND
1,1-Dichloroethene	ND	1.2	ND	ND
cis-1,2-Dichloroethene	ND	14.0	9.5	3.7
Dichloromethane	ND	ND	6.0	ND
Ethylbenzene	2.0	32.0	1,200.0	38.0
Tetrachloroethane	ND	0.7	ND	ND
Toluene	5.6	20.0	270.0	14.0
1,1,1-Trichloroethane	ND	ND	ND	2.5
Trichloroethene	ND	20.0	1.3	ND
Trichlorofluoromethane	ND	ND	0.9	ND
Vinyl Chloride	ND	ND	3.5	1.9
Xylenes	21.0	460.0	2,500.0	550.0

table 3

Landfill gas samples SG1, SG2, SG3, and SG20 are not representative of natural gas because they lack all but methane in its constituents for low boiling compounds. The differences in constituent concentration between SG1, SG2, SG3, and SG20 can be explained by the fact that the waste within the landfill is not homogeneous throughout the soil and debris mixture. Given the inhomogeneity of the landfill matrix and the number of compounds detected, a general representation of the landfill gas may be assumed by summarizing the range of constituents which were detected in at least three of the four samples (SG1, SG2, SG3, & SG20). Table 4 below illustrates the type and range of landfill gas constituents which will be used to generally represent the landfill gas at the site.

LANDFILL GAS SAMPLE CONSTITUENTS	
COMPOUND	SAMPLE CONCENTRATION(ppbv)
LOW BOILING COMPOUND	
Methane	280,000,000.0 to 540,000,000.0
Butane	150.0 to 660.0
Pentane	110.0 to 290.0
Hexane	60.0 to 790.0
VOLATILE ORGANIC COMPOUNDS	
Benzene	86.0 to 250.0
Carbon disulfide	21.0 to 650.0
Chlorobenzene	13.0 to 140.0
1,2-Dichlorobenzene	0.4 to 2.3
1,4-Dichlorobenzene	6.7 to 35.0
cis-1,2-Dichloroethene	3.7 to 14.0
Ethylbenzene	2.0 to 1,200.0
Toluene	5.6 to 270.0
Xylenes	21.0 to 2,500.0

table 4

Having established the constituents in the natural gas (table 2) and the landfill gas (table 4), several compounds are found to be unique to either of the two and are listed below in table 5. These compounds will be used to distinguish if a contamination is the result of natural gas, landfill gas, or a combination of the two.

LIST OF CONTAMINANT GUIDELINES, TO BE USED FOR IDENTIFICATION	
COMPOUND	SAMPLE CONCENTRATION (ppbv)
NATURAL GAS	
Ethane	NOTE Quantity is of no concern, only the fact that the concentration of constituents will be ethane>propane.
Propane	
LANDFILL GAS	
Carbon disulfide	21.0 to 650.0
1,2-Dichlorobenzene	0.4 to 2.3
1,4-Dichlorobenzene	6.7 to 35.0
cis-1,2-Dichloroethane	3.7 to 14.0

table 5

Using table 5 and comparing it to the remaining landfill soil gas sample SG21, a determination is made below to determine the source or sources of contamination (see table 6):

CONTAMINANT GUIDELINES		
COMPOUND	STANDARD(ppbv)	SG21 (ppbv)
NATURAL GAS		
Ethane	D	130,000.0
Propane	D	50,000.0
LANDFILL GAS		
Carbon disulfide	21.0 to 650.0	44.0
1,2-Dichlorobenzene	0.4 to 2.3	1.2
1,4-Dichlorobenzene	6.7 to 35.0	10.0
cis-1,2-Dichloroethane	3.7 to 14.0	1.5

table 6

Landfill gas sample SG21 contains the same constituents as the natural gas and landfill gas. Although the low boiling gases like methane, ethane, propane, butane, pentane, and hexane are not similar when compared by ratio relationship to one another (see table 2 and attached summary sheet for comparison), but a similarity does exist because of the constituents present and they are in descending order with:

methane > ethane > propane > butane > pentane > hexane

The ratio differences can be explained by the influence of external factors such as the addition of landfill contaminants, chemical reaction with other landfill chemical contaminants, and the natural gas supplies probably originating from different geographical locations. Therefore it is believed that sample SG21 received contamination from minor leakage from the nearby high pressure gas line and the landfill gas.

PIPELINE GASES: The term pipeline gases is referring to gases that migrate on the outside of the pipeline in the bedding gravel used for the installation of the sewer line. Migration is occurring due to the gases being trapped in the subsurface and seeking the path of least resistance. Of a total of 13 sampling locations chosen, only 11 samples were taken from the bedding gravel used along various points of the sewer system. Samples SG6 and SG8 were not taken, sample SG6 was not taken due to a high groundwater table which submersed the bedding gravel. TAT was unable to get a reading at SG8.

A total of 2 samples (SG4 & SG5) were taken in the bedding gravel along the portion of the pipeline installed within the soil matrix of the old municipal waste landfill adjacent to the Marlaing Addition. The comparison of these samples to the list of contaminant gas is as follows (see table 7):

CONTAMINANT GUIDELINES			
COMPOUND	STANDARD(ppbv)	SG4(ppbv)	SG5(ppbv)
NATURAL GAS			
Ethane	D	ND	ND
Propane	D	ND	ND
LANDFILL GAS			
Carbon disulfide	21.0 to 650.0	ND	35.0
1,2-Dichlorobenzene	0.4 to 2.3	ND	1.4
1,4-Dichlorobenzene	6.7 to 35.0	ND	46.0
cis-1,2-Dichloroethane	3.7 to 14.0	ND	11.0

table 7

According to the contaminant guidelines used in table 7, SG4 is not contaminated and SG5 shows contamination from landfill gas. Although SG4 is shown as not being contaminated, when looking at the attached data summary, SG4 is contaminated with many other volatile organic compounds not common to what has been defined as landfill gas. These uncommon compounds can be contributed to the fact that the debris is not homogeneous. The primary importance of SG4 and SG5 is that the results show that landfill gases are entering the sewer line bedding gravel as the path of least resistance.

A total of 2 samples (SG6 & SG7) were taken in the bedding gravel along 2 portions of the pipeline installed that would act as channels to transport landfill gas throughout the Marlaing Addition. Because of the high water problem SG6 was not used so the comparison of SG7 to the list of contaminant gas is as follows (see table 8):

CONTAMINANT GUIDELINES		
COMPOUND	STANDARD(ppbv)	SG7(ppbv)
NATURAL GAS		
Ethane	D	170,000.0
Propane	D	ND
LANDFILL GAS		
Carbon disulfide	21.0 to 650.0	20.0
1,2-Dichlorobenzene	0.4 to 2.3	ND
1,4-Dichlorobenzene	6.7 to 35.0	3.6
cis-1,2-Dichloroethane	3.7 to 14.0	18.0

table 8

According to the contaminant guidelines used in table 8, SG7 is potentially contaminated with natural gas and landfill gas. When looking at the attached data summary, SG7 is contaminated with many other volatile organic compounds associated with the soil gas sample taken in the landfill and in addition it contains all but propane as a constituent for natural gas. Due to the fact that a high pressure gas line intersects the Marlaing Addition sewer line within 100' of the sampling location and that privately owned natural gas lines exist within the immediate area or at other portions of the sewer line away from the sampling point, the source of contamination is a combination problem of natural gas and landfill gas. Also, finding some of the natural gas constituents at SG4 and SG5 as seen in the attached data summary, and that the further one gets from SG7 along the sewer line the values decrease, this points to SG7 as being the possible area for the source of natural gas.

The remaining 8 samples (SG9, SG10, SG12, SG13, SG14, SG15, SG16, & SG19) were taken in the bedding gravel along the sewer line. This included locations parallel to Huntington Street in the direction of the effluent flow, and along 3 perpendicular sewer line connections. The comparison of SG9, SG10, SG12, SG13, SG14, SG15, SG16, and SG19 to the list of contaminant gas is as follows (see tables 9, 10, & 11):

CONTAMINANT GUIDELINES

COMPOUND	STANDARD(ppbv)	SG9(ppbv)	SG10(ppbv)	SG12(ppbv)
NATURAL GAS				
hane	D	ND	ND	ND
opane	D	ND	ND	ND
LANDFILL GAS				
rbon disulfide	21.0 to 650.0	4.4	23.0	9.4
?-Dichlorobenzene	0.4 to 2.3	ND	ND	ND
-Dichlorobenzene	6.7 to 35.0	3.5	7.0	3.7
-1,2-Dichloroethane	3.7 to 14.0	ND	ND	ND

table 9

CONTAMINANT GUIDELINES

COMPOUND	STANDARD(ppbv)	SG13(ppbv)	SG14(ppbv)	SG15(ppbv)
NATURAL GAS				
ane	D	2,200,000.0	ND	ND
ane	D	200,000.0	ND	ND
LANDFILL GAS				
on disulfide	21.0 to 650.0	ND	4.7	ND
Dichlorobenzene	0.4 to 2.3	ND	ND	ND
Dichlorobenzene	6.7 to 35.0	ND	0.5	0.9
1,2-Dichloroethane	3.7 to 14.0	ND	ND	ND

table 10

CONTAMINANT GUIDELINES			
COMPOUND	STANDARD(ppbv)	SG16(ppbv)	SG19(ppbv)
NATURAL GAS			
Ethane	D	ND	ND
Propane	D	ND	ND
LANDFILL GAS			
Carbon disulfide	21.0 to 650.0	ND	ND
1,2-Dichlorobenzene	0.4 to 2.3	ND	ND
1,4-Dichlorobenzene	6.7 to 35.0	ND	ND
cis-1,2-Dichloroethane	3.7 to 14.0	ND	ND

table 11

According to the contaminant guidelines used in tables 9, 10, & 11 the follow conclusions can be made:

SG9 is receiving no contamination from natural gas but may be potentially contaminated by landfill gas.

SG10 is receiving no contamination from natural gas but may be potentially contaminated by landfill gas. Although the area where the sample was taken is isolated from by a high groundwater table surrounding the bedding gravel at sampling location SG6, residual contamination may exist from contamination supplied during periods that gases were able to get past sampling point SG6.

SG12 is receiving no contamination from natural gas but may be potentially contaminated by landfill gas.

SG13 is receiving contamination from a natural gas source which may be causing the potential source at SG4, SG5, and SG7. Although no landfill gas could be determined to exist, the possibility exist because the levels or pressure of the natural gas contamination may overpowering the presence of the landfill gas.

SG14 is receiving no contamination from natural gas but may be potentially contaminated by landfill gas.

SG15, SG16, and SG19 show no contamination from natural gas or landfill gas. Although SG15 shows minor levels of some type of contamination, it verifies that the further that samples are taken south and away from the landfill, there is a decrease in the levels of contaminants. From this information, it can be determined that Chemical City is not a source to the problem. Primarily SG16 was a no-hit on soil gas sampling which showed no levels of methane as seen in the attached data summary.

When comparing the methane levels for SG9, SG10, SG12, SG13, SG14, SG15, SG16, and SG19 from the attached data summary, the following conclusions can be made:

1. SG13 is of natural gas origin.

2. SG16 was a no hit because the sample may not have been taken within the bedding gravel of the pipeline.

3. Since SG9, SG10, SG12, and SG14 are potentially receiving contamination from landfill gas, and methane levels are high, the source of contamination to these areas probably originates from the landfill.

4. SG15 and SG19 do show lower levels of methane, therefore, the source for their contamination may not be the landfill but soil organic degradation.

MANHOLE GASES: The term manhole gases is referring to gases that were measured using a Combustible Gas Indicator (CGI) and showed a definite presence of explosive or potentially explosive levels of combustible gas. Three manholes (F16-2, F16-1, & F1-4) showed levels of combustible gas. These manholes were labeled as follows for sampling:

F16-2 = MHG17
F16-1 = MHG18
F1-4 = MHG22

The comparison of these samples to the list of contaminant gas is as follows (see table 12):

CONTAMINANT GUIDELINES

COMPOUND	STANDARD(ppbv)	MHG17(ppbv)	MHG18(ppbv)	MHG22(ppbv)
NATURAL GAS				
ne	D	85,000.0	270,000.0	66,000.0
ane	D	18,000.0	ND	970.0
LANDFILL GAS				
on disulfide	21.0 to 650.0	ND	ND	ND
)ichlorobenzene	0.4 to 2.3	ND	ND	ND
)ichlorobenzene	6.7 to 35.0	0.6	ND	1.0
,2-Dichloroethane	3.7 to 14.0	3.0	ND	ND

table 12

According to the contaminant guidelines used in table 12, MHG17, MHG18, and MHG22 are being contaminated by a natural gas source with a potential source for landfill gas. It appears that since MHG17 and MHG22 have lessor values of contaminants and that MHG18 is between MHG17 and MHG22, the source is near MHG18. Assuming that the source is primarily natural gas for the cause of the explosive levels of gas, a comparison MHG17, MHG18, MHG22, and SG13 (was taken 1' from where MHG18 was taken, this was along the outside of F16-1) is as follows (see table 13):

NATURAL GAS SAMPLE CONSTITUENTS					
COMPOUND	SG11(ppbv)	MHG17(ppbv)	MHG18(ppbv)	SG13(ppbv)	MHG22(ppbv)
LOW BOILING COMPOUNDS					
Methane	750,000,000	48,000,000	65,000,000	280,000,000	5,300,000
Ethane	28,000,000	85,000	270,000	2,200,000	66,000
Propane	5,100,000	18,000	ND	200,000	970
Butane	1,400,000	390	170	56,000	230
Pentane	370,000	240	100	6,900	50
Hexane	110,000	150	150	9,800	70
VOLATILE ORGANIC COMPOUNDS					
Benzene	25,000	4.0	2.9	160.0	2.5
Chlorobenzene	260	2.2	0.8	13.0	1.7
Ethylbenzene	600	0.5	0.4	ND	5.3
Toluene	13,000	1.6	1.2	20.0	4.6
Xylenes	4,900	8.2	3.8	60.0	40.0

table 13

According to the contaminant guideline for the constituents of natural gas, it can be stated that the source for the explosive levels of gas is of natural gas origin. Therefore the following conclusions can be made:

1. The gases on the inside (MHG18) and the outside (SG13) of manhole F16-1 are one of the same origin.

2. Since the level of contaminants are far greater on the outside (SG13) then on the inside (MHG18), the origin of the source is outside migrating into the manholes

and away from the sewer system.

3. Again it can be stated that since SG13 & MHG18 values for the contaminants are greater than MHG17 and MHG22, the source is closer to manhole F16-1.

CONCLUSION

From the results and interpretation of the analytical data it is determined that the problem within the Marlaing addition is very complex, but several determinations can be made:

1. The source of contamination to manholes F16-2, F16-1, and F1-4 is of natural gas origin.

2. The bedding gravel is and can be a conduit for the transportation and migration of contaminants.

3. The approximate 700' long section of the F16 sewer line that was installed throughout the landfill soil matrix, acts as collection system and pathway to provide for the transportation of landfill gases.

4. The source of contamination throughout the Marlaing Addition Sewer System can vary from natural gas, landfill gas, to a combination of natural gas and landfill gas.

5. It was visually observed that the surface soil in the northern portion of the Marlaing Addition is primarily composed of clay and the soils in the southern portion are composed of sand. Therefore the clay soil in the northern portion of Marlaing Addition creates a trap for gases within the subsurface and the gases take the path of least resistance.

6. Since the Marlaing Addition and the landfill exist within the 100 year flood plain of the geologically mature Kanawha River, the distribution of subsurface materials such as gravel, sands, and clay sized particles can vary substantially within the soil matrix. Therefore the subsurface soils can act as a storage field and or an avenue for transportation and migration of contaminants generated from landfill gases or natural gas leaks.

7. Even though contaminants have been determined to be landfill gas and natural gas, the source of the natural gas contamination could come from high pressure lines within the immediate area, residential supply lines, the storage of natural gas within the subsurface matrix, or an unknown source such as an old abandoned gas well.

8. From visual observation it was noted that the sealant (tar like) used for the manhole joints appears to be dissolving by organic solvent vapors. This is occurring in the manholes located within the area of the landfill, particularly to manhole F16-3.

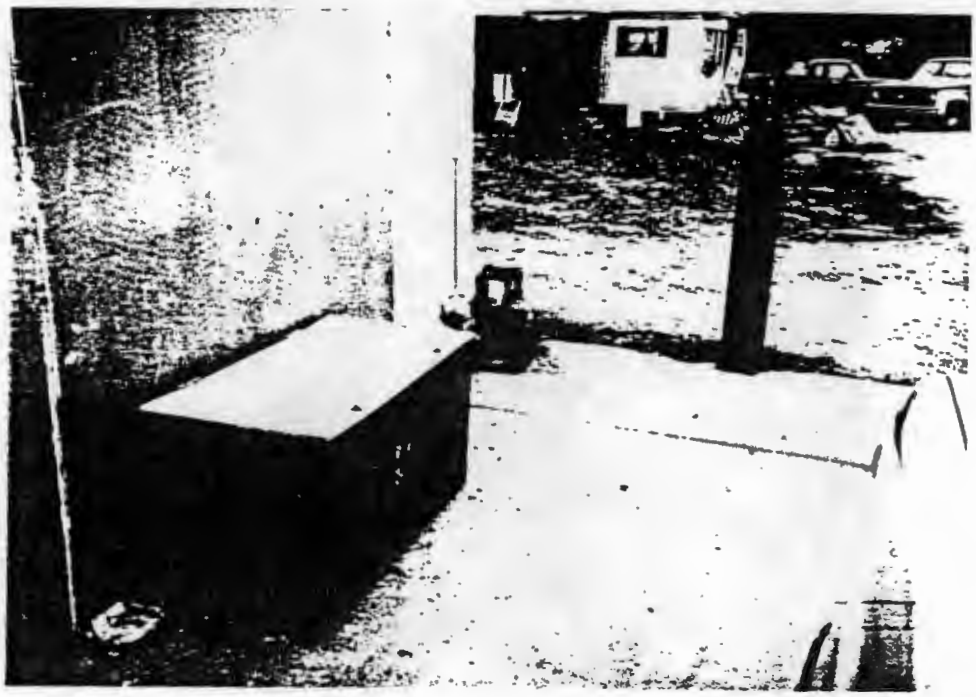
RECOMMENDATION

It is the recommendation that further soil gas sampling be performed around manholes F16-2, F16-1, and F1-4 to identify the source of the natural gas. A method should be designed to ventilate the landfill to provide a better path of least resistance of landfill gases. This would limit or eliminate subsurface migration, in event that the problem generated from the natural gas leak or leaks is replaced by the methane or other gases generated by the landfill.

ATTACHMENTS: Photographs
Site Sketches and Maps
Analytical Data Summary
Analytical Results

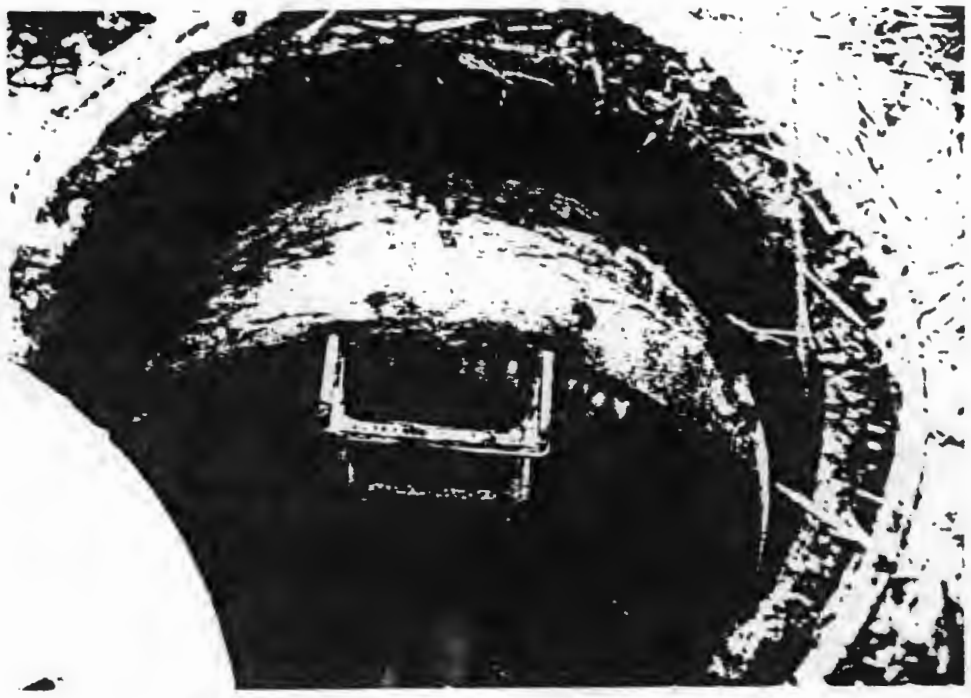
Marlaing Addition Gas Release Site
Saint Albans, Kanawha County, WV
Photo Taken: 10/31/91

Remarks: Photo shows TAT performing soil gas sampling at SG3 to obtain a representative sample of the landfill gas. A slam bar with metal rod extensions were used to obtain the proper depth for sampling.



Marlaing Addition Gas Release Site
Saint Albans, Kanawha County, WV
Photo Taken: 11/02/91

emarks: Photo shows the gas meter used to obtain a epresentative sample of natural gas (sample SG11). Sampling ocation is at a building owned by Mr. Sanson on the northwest orner of 1st Avenue and Huntington Street.



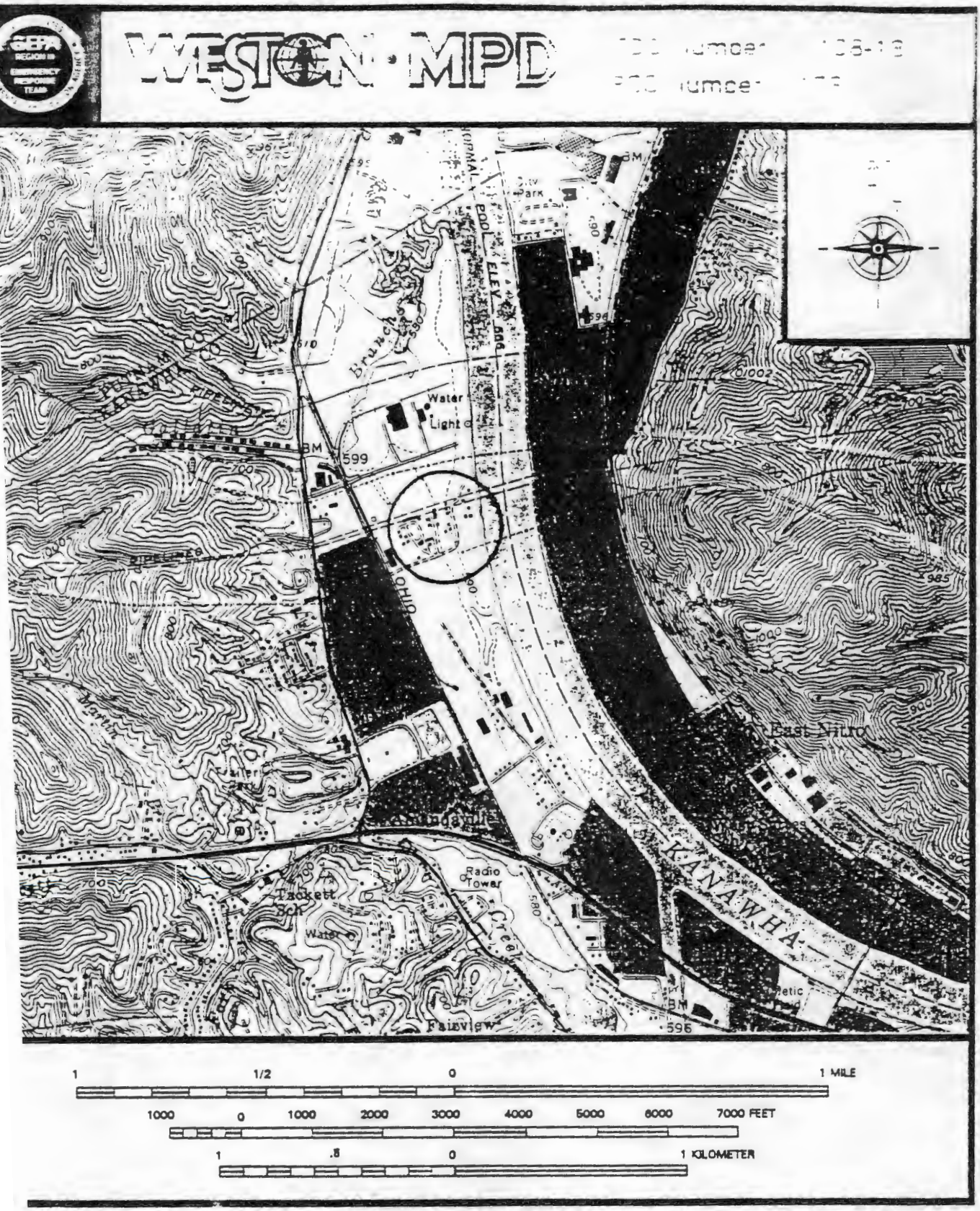
Marlaing Addition Gas Release Site
Saint Albans, Kanawha County, WV
Photo Taken: 10/30/91

Remarks: Photo shows the sealant (tar like) used on the concrete joints of manhole F16-3, flowing down the interior walls of the manhole. It is believed that the sealant is dissolving from the organic vapors within the matrix of the landfill.

SITE LOCATION MAP

Marlaing Addition Gas Release

St. Albans, Kanawha County, West Virginia



SITE TOPOGRAPHIC MAP

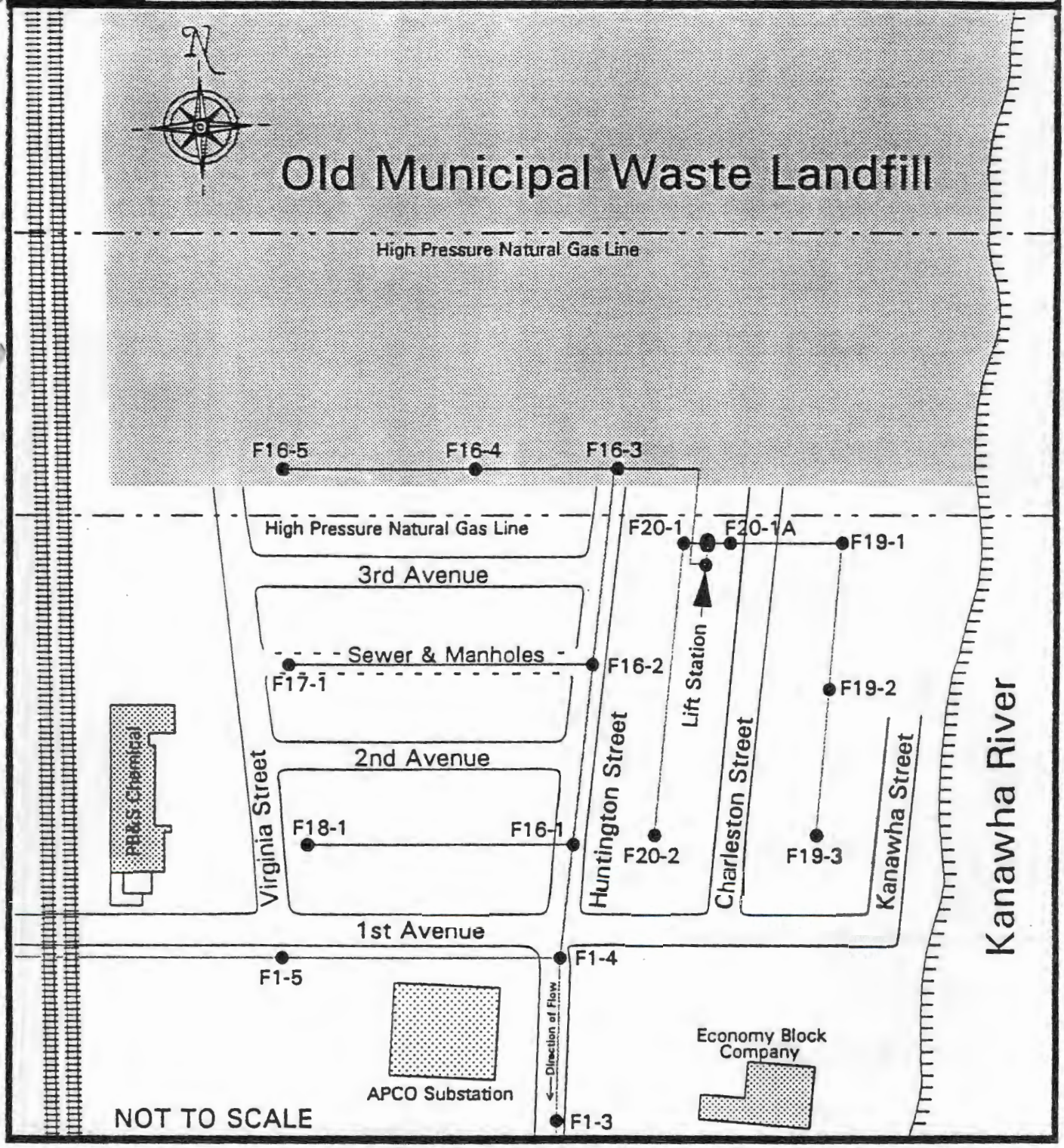
(Saint Albans Quadrangle)

Marlaing Addition Gas Release

St. Albans, Kanawha County, West Virginia

WESTON · MPD

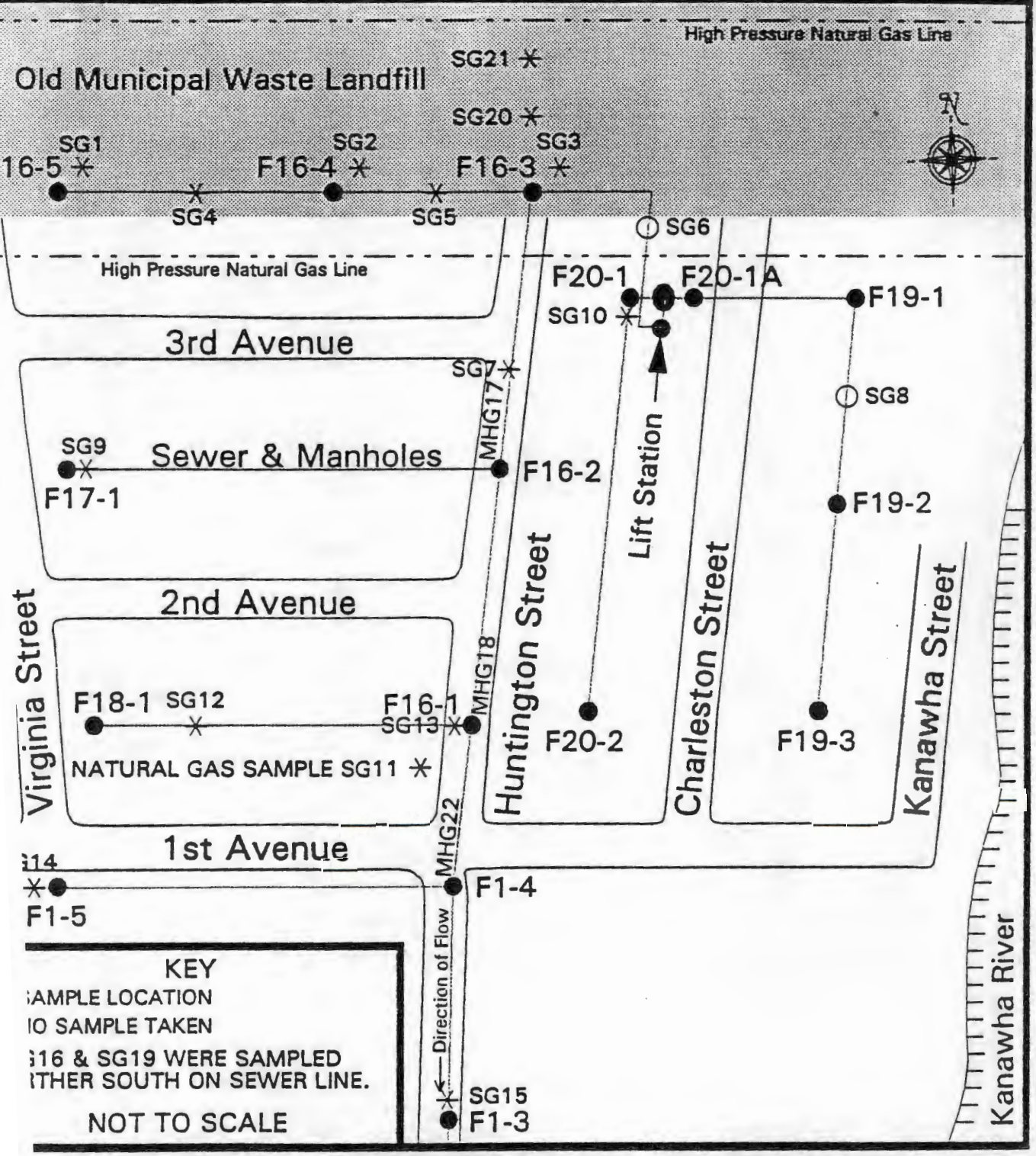
TDD Number: 9108-18
PCS Number: 1781



SITE SKETCH
Marlaing Addition Gas Release
St. Albans, Kanawha County, West Virginia

WESTON · MPD

TDD Number: 9108-18
PCS Number: 1781



SAMPLING MAP
Marlaing Addition Gas Release
St. Albans, Kanawha County, West Virginia

ARLAING ADDITION GAS RELEASE SITE ASSESSMENT (10/30/91 – 11/02/91): LOW BOILING COMPOUNDS

SAMPLE NUMBERS	SG1	SG2	SG3	SG4	SG5	SG7	SG9	SG10
UNITS	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
Methane (C1H4)	280,000,000.00	440,000,000.00	540,000,000.00	3,100,000.00	510,000,000.00	74,000,000.00	1,900,000.00	320,000.00
Ethane (C2H6)	ND	ND	ND	ND	ND	170,000.00	ND	ND
Propane (C3H8)	ND	ND	ND	ND	ND	ND	ND	ND
Butenes (C4H8)	ND	ND	ND	ND	430.00	ND	ND	ND
Butanes (C4H10)	190.00	ND	660.00	10.00	320.00	1,300.00	ND	80.00
Hydrocarbon (C5H10)	ND	100.00	ND	ND	ND	ND	ND	ND
Pentanes (C5H12)	110.00	ND	290.00	8.00	260.00	1,200.00	ND	ND
Hydrocarbon (C6H12)	ND	ND	ND	ND	ND	190.00	ND	ND
Hexanes (C6H14)	60.00	80.00	ND	ND	ND	1,400.00	ND	ND
Cyclohydrocarbon (C7H10)	ND	ND	ND	30.00	ND	ND	ND	ND
Hydrocarbon (C7H14)	80.00	ND	490.00	ND	200.00	660.00	ND	ND
Heptanes (C7H16)	180.00	420.00	1,700.00	ND	640.00	990.00	ND	ND
Aromatic Hydrocarbons (C8H10)	ND	ND	ND	ND	ND	ND	ND	ND
Hydrocarbon (C8H16)	40.00	600.00	1,700.00	ND	220.00	1,500.00	ND	ND
Octanes (C8H18)	230.00	920.00	2,900.00	ND	590.00	520.00	7.00	40.00
Aromatic Hydrocarbon (C9H12)	80.00	90.00	ND	ND	660.00	90.00	ND	330.00
Hydrocarbon (C9H16)	160.00	ND	ND	ND	ND	ND	ND	ND
Hydrocarbon (C9H18)	350.00	590.00	1,800.00	ND	1,300.00	230.00	10.00	90.00
Nonanes (C9H20)	760.00	1,200.00	2,500.00	20.00	2,900.00	750.00	20.00	280.00
Hydrocarbons (C10H14)	ND	290.00	ND	30.00	ND	ND	ND	ND
Hydrocarbons (C10H16)	ND	ND	ND	20.00	ND	ND	20.00	ND
Hydrocarbons (C10H18)	160.00	110.00	330.00	60.00	500.00	ND	30.00	ND
Hydrocarbons (C10H20)	610.00	1,100.00	2,400.00	ND	2,100.00	530.00	90.00	440.00
Decanes (C10H22)	650.00	1,200.00	150.00	ND	1,900.00	60.00	50.00	800.00
Hydrocarbon (C11H20)	220.00	ND	820.00	ND	160.00	ND	ND	ND
Hydrocarbons (C11H22)	230.00	390.00	310.00	7.00	420.00	50.00	9.00	70.00
Hydrocarbons (C11H24)	ND	ND	ND	ND	ND	ND	40.00	ND
Undecanes (C11H24)	600.00	ND	470.00	3.00	640.00	70.00	ND	890.00
Hydrocarbons (C12H24)	ND	240.00	ND	ND	ND	30.00	40.00	ND
Dodecanes (C12H26)	ND	ND	ND	ND	ND	ND	8.00	ND
Hydrocarbons (C13H28)	ND	ND	ND	ND	240.00	ND	ND	ND
Freon 12 (CCl2F2)	ND	ND	ND	ND	140.00	ND	ND	ND
Freon 22 (CHClF2)	ND	ND	ND	ND	210.00	ND	ND	ND

LAING ADDITION GAS RELEASE SITE ASSESSMENT (10/30/91 – 11/02/91): VOLATILE ORGANICS

PLE NUMBERS	SG11	SG11 DUP	SG12	SG13	SG14	SG15	SG16	MHG17
S	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
	ND	ND	ND	ND	32.00	24.00	6.00	ND
	25,000.00	28,000.00	1.70	160.00	13.00	3.40	1.40	4.00
chloromethane	ND	ND	ND	ND	ND	ND	ND	ND
ethane (Methyl Bromide)	ND	ND	ND	ND	ND	ND	ND	ND
rm	ND	ND	ND	ND	ND	ND	ND	ND
diene	ND	ND	ND	ND	1.90	ND	ND	ND
ne (MEK)	ND	ND	ND	ND	ND	ND	ND	ND
)isulfide	ND	ND	9.40	ND	4.70	ND	ND	ND
:trachloride	ND	ND	ND	ND	ND	ND	ND	ND
nzene	260.00	260.00	6.60	13.00	1.40	2.60	4.80	2.20
ane (Ethyl Chloride)	ND	ND	ND	ND	ND	ND	ND	ND
:thylvinyl ether	ND	ND	ND	ND	ND	ND	ND	ND
m	ND	ND	ND	ND	12.0	6.90	3.00	ND
thane (Methyl Chloride)	ND	ND	ND	ND	ND	ND	ND	ND
hloromethane	ND	ND	ND	ND	ND	ND	ND	ND
moethane (EDB)	ND	ND	ND	ND	ND	ND	ND	ND
robenzene	ND	ND	ND	ND	ND	ND	ND	ND
robenzene	ND	ND	ND	ND	ND	ND	ND	ND
robenzene	ND	ND	3.70	ND	0.50	0.90	ND	0.60
roethane	ND	ND	ND	22.00	ND	ND	ND	ND
roethane (EDC)	ND	ND	ND	ND	ND	ND	ND	ND
roethene	ND	ND	ND	ND	ND	ND	ND	ND
hloroethene	ND	ND	ND	ND	ND	ND	ND	3.00
)ichloroethene	ND	ND	ND	ND	ND	ND	ND	0.60
thane	ND	ND	ND	ND	ND	ND	ND	ND
opropane	ND	ND	ND	ND	ND	ND	ND	ND
hloropropene	ND	ND	ND	ND	ND	ND	ND	ND
ichloropropene	ND	ND	ND	ND	ND	ND	ND	ND
e	600.00	780.00	0.40	ND	1.00	0.70	0.40	0.50
	ND	ND	ND	ND	ND	ND	ND	ND
-Pentanone (MIBK)	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	ND	0.70	ND	ND	0.50
achloroethane	ND	ND	ND	ND	ND	ND	ND	ND
thane (PCE)	ND	ND	ND	ND	0.70	0.30	ND	9.90
	13,000.00	16,000.00	2.30	20.00	5.80	3.90	1.20	1.60
roethane (TCA)	ND	ND	ND	ND	ND	ND	ND	ND
roethane	ND	ND	ND	ND	ND	ND	ND	ND
ne (TCE)	ND	ND	ND	ND	ND	ND	ND	4.60
romethane (F-11)	ND	ND	ND	ND	ND	ND	ND	ND
oroethane (F-113)	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND
e	ND	ND	ND	47.00	ND	ND	ND	ND
l	4,900.00	5,900.00	6.50	60.00	8.70	11.00	17.00	8.20

MARLAING ADDITION GAS RELEASE SITE ASSESSMENT (10/30/91 – 11/02/91): LOW BOILING COMPOUNDS

SAMPLE NUMBERS	SG11	SG11 DUP	SG12	SG13	SG14	SG15	SG16	MHG17
UNITS	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
Methane (C1H4)	750,000,000.00		270,000.00	280,000,000.00	180,000.00	2,700,000.00	ND	48,000,000.00
Ethane (C2H6)	28,000,000.00		ND	2,200,000.00	ND	ND	ND	85,000.00
Propane (C3H8)	5,100,000.00		ND	200,000.00	ND	ND	ND	18,000.00
Butenes (C4H8)	ND		ND	ND	ND	ND	ND	ND
Butanes (C4H10)	1,400,000.00		ND	56,000.00	ND	70.00	ND	390.00
Hydrocarbon (C5H10)	ND		ND	2,800.00	ND	ND	ND	ND
Pentanes (C5H12)	370,000.00		ND	6,900.00	ND	50.00	ND	240.00
Hydrocarbon (C6H12)	11,000.00		ND	ND	ND	ND	ND	100.00
Hexanes (C6H14)	110,000.00		ND	9,800.00	ND	ND	ND	150.00
Cyclohydrocarbon (C7H10)	ND		ND	ND	ND	ND	ND	ND
Hydrocarbon (C7H14)	13,000.00		ND	ND	ND	ND	ND	90.00
Heptanes (C7H16)	25,000.00		ND	6,400.00	ND	ND	ND	20.00
Aromatic Hydrocarbons (C8H10)	ND		ND	ND	10.00	ND	ND	ND
Hydrocarbon (C8H16)	ND		ND	ND	ND	ND	ND	30.00
Octanes (C8H18)	7,100.00		ND	ND	ND	ND	ND	30.00
Aromatic Hydrocarbon (C9H12)	7,700.00		ND	ND	5.00	ND	6.00	ND
Hydrocarbon (C9H16)	ND		ND	ND	ND	ND	ND	ND
Hydrocarbon (C9H18)	ND		ND	ND	10.00	ND	ND	30.00
Nonanes (C9H20)	4,600.00		ND	1,200.00	10.00	ND	ND	ND
Hydrocarbons (C10H14)	ND		60.00	ND	ND	ND	ND	ND
Hydrocarbons (C10H16)	ND		380.00	ND	ND	ND	ND	ND
Hydrocarbons (C10H18)	ND		30.00	ND	ND	ND	ND	ND
Hydrocarbons (C10H20)	ND		60.00	ND	40.00	20.00	20.00	ND
Decanes (C10H22)	ND		ND	ND	8.00	8.00	40.00	20.00
Hydrocarbon (C11H20)	ND		ND	ND	ND	ND	ND	ND
Hydrocarbons (C11H22)	ND		140.00	ND	7.00	ND	ND	ND
Hydrocarbons (C11H24)	ND		ND	ND	ND	ND	ND	40.00
Undecanes (C11H24)	ND		20.00	4,000.00	ND	ND	5.00	20.00
Hydrocarbons (C12H24)	ND		ND	ND	ND	ND	ND	ND
Dodecanes (C12H26)	ND		ND	3,100.00	ND	ND	ND	ND
Hydrocarbons (C13H28)	ND		ND	ND	ND	ND	ND	ND
Freon 12 (CCl2F2)	ND		ND	ND	ND	ND	ND	ND
Freon 22 (CHClF2)	ND		ND	ND	ND	ND	ND	ND

AING ADDITION GAS RELEASE SITE ASSESSMENT (10/30/91 – 11/02/91): VOLATILE ORGANICS

PLE NUMBERS	MHG18	SG19	SG20	SG20 DUP	SG21	MHG22
S	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
	ND	3.00	ND		33.00	ND
	2.90	1.50	200.00		34.00	2.50
chloromethane	ND	ND	ND		ND	ND
ethane (Methyl Bromide)	ND	ND	ND		ND	ND
m	ND	ND	ND		ND	ND
diene	ND	ND	ND		ND	ND
ne (MEK)	ND	ND	ND		ND	ND
isulfide	ND	ND	28.00		44.00	ND
trachloride	ND	ND	ND		ND	ND
nzene	0.80	0.68	24.00		13.00	1.70
ane (Ethyl Chloride)	ND	ND	1.10		ND	ND
thylvinyl ether	ND	ND	ND		ND	ND
n	ND	ND	ND		ND	ND
hane (Methyl Chloride)	ND	ND	ND		ND	ND
loromethane	ND	ND	ND		ND	ND
noethane (EDB)	ND	ND	ND		ND	ND
robenzene	ND	ND	0.50		1.20	ND
robenzene	ND	ND	0.80		ND	ND
robenzene	ND	ND	6.70		10.00	1.00
roethane	ND	ND	ND		ND	ND
roethane (EDC)	ND	ND	ND		ND	ND
oethene	ND	ND	ND		ND	ND
hloroethene	ND	ND	3.70		1.50	ND
ichloroethene	ND	ND	ND		ND	ND
thane	ND	ND	ND		ND	ND
opropane	ND	ND	ND		ND	ND
loropropene	ND	ND	ND		ND	ND
ichloropropene	ND	ND	ND		ND	ND
	0.40	0.20	38.00		16.00	5.30
	ND	ND	ND		ND	ND
Pentanone (MIBK)	ND	ND	ND		ND	ND
	ND	ND	ND		3.00	0.90
ichloroethane	ND	ND	ND		ND	ND
hane (PCE)	0.70	0.50	ND		ND	1.60
	1.20	0.70	14.00		13.00	4.60
roethane (TCA)	ND	0.50	2.50		ND	0.60
roethane	ND	ND	ND		ND	ND
ie (TCE)	0.70	1.40	ND		0.40	1.40
omethane (F-11)	ND	16.00	ND		ND	ND
oroethane (F-113)	ND	ND	ND		ND	ND
	ND	ND	ND		ND	ND
	ND	ND	1.90		ND	ND
	3.80	2.70	550.00		340.00	40.00

RP SEARCH AND ISSUANCE C/R DECISION

Site Name: Marlaine Addition
Location: WV
NPL Status: NON-NPL

EPA ID #: WVD 988786125
WasteLAN ID #: 1148 9 ORIGINAL (Red)

Enforcement Screen:

PRP Search/Other

Date Staff Assignment Sheet: 10/22/91
RP Start Search: ✓
Date entered into WasteLAN: 7-28-92
Entered by: Hattie Turner

Date PRP Close-Out Memo: 7/10/92
RP Complete Search: ✓
Issue C/R Decision: ____
Date entered into WasteLAN: 7-28-92
Entered by: Hattie Turner

Activity Type:
- ___ Issue C/R Decison (DD)
- ✓ Non-NPL RP Search (RP)
- ___ NPL RP Search (NS)

Contact Name: Glen Lapsley
Phone: 597-6684
Planning Status: P Lead: FE
No. RP defendants: ____

(Check one in each category)

(DD) SCAP Note:
- ___ No PRP's identified
- ___ PRP's are not viable
- ___ Questionable evidence
- ___ Questionable case
- ___ Other comment

(DD) Full/Partial Settlement:
- ___ Blank
- ___ A - Final Resolution of Work/Costs
- ___ B - Partial Resolution of Work/Cost, Pursue
- ___ C - Partial Resolution of Work/Cost, Undeter

Start: Plan date: / / Actual date: 10/22/91
Completion: Plan date: / / Actual date: 7/10/92

Comments: Unidentified gas entering a new section of a sewer system manifested itself when a garage in the area had an explosion of unknown origin. GSC determined from sampling and analytical data no immediate threat to public health or environment exists. No enforcement action taken. Site Closed out.

Remedies: (check applicable type)

OP Unit: 00

Remedy Type (XX#):
- ___ (RV) Removal Action
- ___ (ER) Expedited Response
- ___ (RI) Remedial Investigation
- ___ (FS) Feasibility Study

Other ____

Do you wish to add qualifiers? (Y) (N) (if Yes, check applicable qualifiers)
- ___ (FC) Fences
- ___ (FD) Off-Site Disposal
- ___ (SM) Sampling and Monitoring
- ___ (GM) Groundwater Monitoring
- ___ (MX) Mixed Work
- ___ (SN) Signs

Other ____

Non-budget Financial:

Financial Type - (F) Federal Cost Recovery Amount: 0 Date: / /

RP Responsible Party:

Owner: ____
#RP's: 0

EPA Project Manager: Glen Lapsley Phone: 597-6684
Attorney: Roseanne Mistretta Phone: ____

Form Prepared by: Lois Turner **Date:** 7/27/92

DRAFT

Site Cost Recovery Indicator

Required For A C/R Decision

ORIGINAL
(Red)

Enforcement Activity - Full/Part Settlement: (check one)

- ___ A - Final Cost Rec - All Costs Addressed
- ___ B - Partial Cost Rec - Costs Remain, PRP Viable
- ___ C - Partial Cost Rec - Costs Remain, Undetermined
- X D - No Cost Rec - All Costs Written Off
- ___ E - Cost Recovery Action To Be Determined